THE OIL AND GAS JOURNAL

Volume 32
Number 40

February 22, 1934

SUBSCRIPTION RATES: Domestic, 1 year, $6; 6 months, $3. Canadian and foreign, 1 year, $7; 6 months, $3.50. All subscriptions payable in advance. When extra copies of special issues are available they are reserved for subscribers' needs, and may be bought by subscribers at 50 cents each

SPECIAL ARTICLES

Successful Wildcatters Bringing in New Pools to Meet the Increased Demand for Crude Oil ---- 7
By JAMES McINTYRE

Signatures to Agreements Reported Representing 86 Per Cent ---- 8
By ANDREW M. ROWLEY

Bill Prepared for Congress Covering Intrastate Hot Oil ---- 8

West Coast Marketers Bind Themselves in Cartel ---- 9
By ANDREW M. ROWLEY

Federal Recommendation for Texas 947,900 Bbls. in March ---- 10

Tanker Rates and Canal Tolls Factors in Foreign Oil Markets ---- 11
By VALENTIN R. GARFIAS

Drilling Methods Overcome Hazards of Heavily Charged Gas Sands ---- 15
By NEIL WILLIAMS

Vocational Training, Salt Water Disposal and Field Problems at Oklahoma City Meeting ---- 18
By L. G. E. BIGNELL

Report on Reproducibility of Tentative Method of Antiknock Testing ---- 20
By HARRY F. HUF

News From Foreign Lands ---- 22

Convention on Codes at Washington ---- 25

A Drastic Bill (Editorial) ---- 26

A Real Danger (Editorial) ---- 26

Administrators Report on Crude Stocks ---- 30

Underground Reserves Assist Economic Operation ---- 41
By PAUL WAGNER

Development of Sucker Rods and Pull Rods Advanced ---- 42
By R. C. CONINE

Reconditioning in Pennsylvania Returns Profits ---- 49
By R. C. CONINE

Bureau of Mines Report for December ---- 50-52

Corrosion Resisting Malleable Iron in Oil Industry ---- 54
By REBECCA HALL

Field Operations in January ---- 56-61

Knowledge of Formation Characteristics From Cable Tool Cores ---- 62
By WALLACE A. SAWDON

Field Problems From Readers ---- 84
Edited by T. F. SMILEY

FIELD OPERATIONS

Late Fields ---- 25

West and North Texas ---- 44
By L. E. BREDBERG

East Texas ---- 45
By L. E. BREDBERG

North Louisiana-Arkansas, Mississippi ---- 65
By J. R. CRUMPTON

Kansas ---- 66
By JAMES McINTYRE

Gulf Coast ---- 68
By NEIL WILLIAMS

Oklahoma ---- 70
By JAMES McINTYRE

Southwest Texas ---- 72
By B. D. STEVENSON

California ---- 73
By L. P. STOCKMAN

Rocky Mountain Area ---- 75
By TOLBERT R. INGRAM

Canada ---- 75
By VICTOR LAURISTON

Michigan ---- 78
By PAUL A. ELLIOTT

Central West ---- 78
By GEORGE A. WHITNEY

Eastern Fields ---- 79
By SPECIAL CORRESPONDENT

REFINING AND MARKETING

Gasoline in Group 3 Suffers a Severe Attack of Nerves, But Stronger Market Believed Near ---- 28
By T. F. SMILEY

A.P.I. Refinery Report ---- 29

New York Market ---- 29
By C. O. WILLSON

Refinery and Crude Prices ---- 34-35

Tank Wagon Markets ---- 36

News for Petroleum Refiners ---- 37

Natural Gasoline Manufacture ---- 38

Chicago Market ---- 40

Technical Questions Answered ---- 81
By C. K. FRANCIS, Ph. D.

GENERAL DEPARTMENTS

Pipe Line Construction ---- 46

Natural Gas Developments ---- 83

Personal Paragraphs ---- 86-87

Do You Remember? ---- 86

New and Improved Equipment ---- 88

Market Record of Oil Securities ---- 89

Classified Advertising ---- 95

Index to Advertisers ---- 96

Refinery Section Starts on Page 28

Branch Editorial Offices

CHATHAM, ONT.	CHICAGO, ILL.	DENVER, COLO.	FT. WORTH, TEX.	HOUSTON, TEX.	LOS ANGELES	OIL CITY, PA.
Victor Lauriston	Robert C. Conine	Tolbert R. Ingram	L. E. Bredberg	Neil Williams	L. P. Stockman	R. C. Conine
35 Stanley Ave.	6 N. Michigan Ave.	State Office Bldg.	Petroleum Bldg.	Sec. Natl. Bank Bldg.	Union Oil Bldg.	Oil City Derrick

MUSKEGON, MICH.	SAN ANTONIO, TEX.	TOLEDO, OHIO	SHREVEPORT, LA.	NEW YORK	WASHINGTON, D. C.
Paul A. Elliott	B. D. Stevenson	George A. Whitney	J. R. Crumpton	C. O. Willson	Charles E. Kern
Chronicle Bldg.	802 Milam Bldg.	Box 98, Main P.O.	540 Ricou Brewster Bldg.	415 Lexington Ave.	809 Inv. Bldg., 15th & K, NW

Branch Advertising Offices

NEW YORK	CLEVELAND, OHIO	CHICAGO	LOS ANGELES	HOUSTON, TEX.
C. L. Cain	Howard Markt	C. R. Farmer	J. H. Tinkham	Paul T. Putnam
415 Lexington Ave.	802 Leader Bldg.	6 N. Michigan Ave., Rm. 1416	2941 Raymond Ave.	1113 Sec. Natl. Bank Bldg.

Copyright, 1934, by The Petroleum Publishing Co.

What it Does . . .

•1• Bringing In the Well. Better production results from scraping the mud from the face of producing sands.

•2• Underreaming Before Setting Liners and casing. You can run larger liners and run them easier and safer.

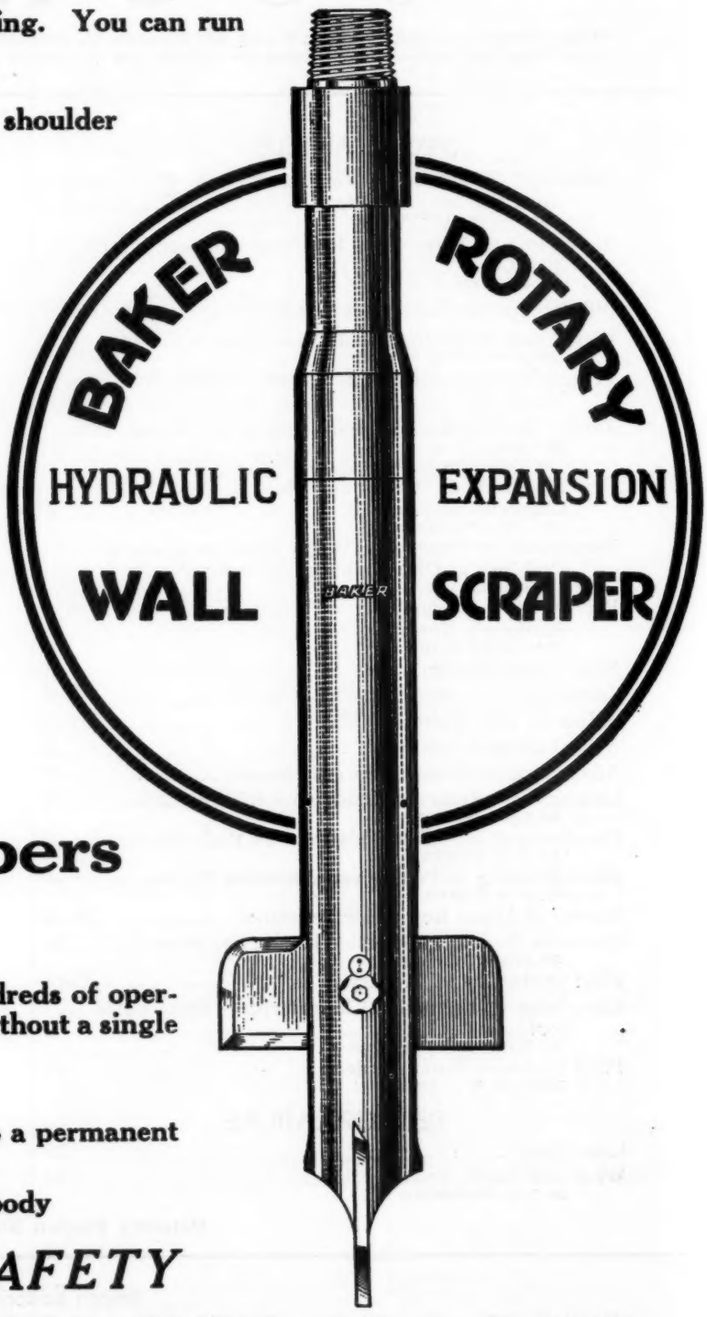
•3• Straightening Crooked Holes. Make a larger shoulder and correct deviation several degrees.

•4• Enlarging Hole Before Cementing. Gives the cement room to flow completely around the shoe joint and as far up the hole as desired.

•5• Cementing Combination Strings. Underreaming gives that vital clearance around the perforations of your cement hook-up.

•6• Re-Cementing Jobs. Drill out old cement; then underream to size of original hole. You are ready to re-cement.

•7• Cleaning Out Old Wells. The best "mechanical" means yet devised is underreaming. You scrape off and enlarge the productive area.



BAKER Wall Scrapers are SAFE...

and the PROOF of their safety lies in the hundreds of operators who have run them thousands of times without a single accident.

This proof demonstrates . . . .

1 - WALL SCRAPER Blades will not bend to a permanent set.

2 - They unfailingly close downward into the body

. . . . results with perfect SAFETY

[This EVIDENCE is available. Whether you are interested in this tool at present, or not, get the facts. One never knows when he'll need them.]

NRA MEMBER WE DO OUR PART

BAKER OIL TOOLS, INC.

SEE OUR DESCRIPTIONS IN THE COMPOSITE CATALOG

P. O. BOX 609, HUNTINGTON PARK, CALIFORNIA

COALINGA ▲ TAFT ▲ HOUSTON ▲ OKLAHOMA CITY ▲ TULSA ▲ NEW YORK CITY

Successful Wildcatters Bringing in New Pools to Meet the Increased Demand for Crude Oil

By JAMES McINTYRE

WITH the oil administration in Washington doing its utmost to make the oil code completely workable and with the demand for crude oil apparently on the increase the industry is approaching the spring season of increased consumption hopeful that the year will be one of comparative prosperity for all engaged in it.

Meanwhile wildcatters are actively at work seeking new pools, with some of them succeeding, the field reports indicate.

Tom Palmer and others' test just outside the townsite of Russell, Russell County, Kansas, proved an important discovery by producing 770 bbls. of oil from Silicious lime in 18 hours.

In Oklahoma, a community test being drilled in Section 25-12-3, near the town of Meeker, Lincoln County, Oklahoma has opened production in the Wilcox sand, but the oil is low in gravity compared with the usual Wilcox sand crude. Two other discoveries which are still in the incomplete stage, but which are considered important are the Manahan Drilling Co. and others' test in the Fitts area in Southern Pontotoc County and the Springrose Drilling Co's. wildcat, testing out a part of the great Newalla structure in Eastern Oklahoma County.

A 1,000-barrel wildcat well in Section 28-15n-3w, Isabella County, producing from Dundee sand indicates that there is much to be done in exploratory and development work before the big Midland Field in Michigan is all proven.

By the end of this week the industry may learn much of value concerning the Cleveland and Splendora areas in Liberty and Montgomery Counties, Texas, as several tests were at the critical stage when the week opened.

In Southwest Texas another extension of the Government Wells Field in Northern Duval County was indicated. In San Patricio County, a vigorous leasing campaign in a district consisting of 90 square miles is being followed up by the first real exploratory work.

In the Western Texas and Panhandle fields wildcat tests in Pecos, Howard and Childress Counties have been started. The Childress County test is on a large block and will be drilled to a great depth if necessary.

A second gas discovery has been made in Anderson County, East Central Texas. The owners are seeking oil, and thus far the new well has not demonstrated the oil showing reported in the first test in the field.

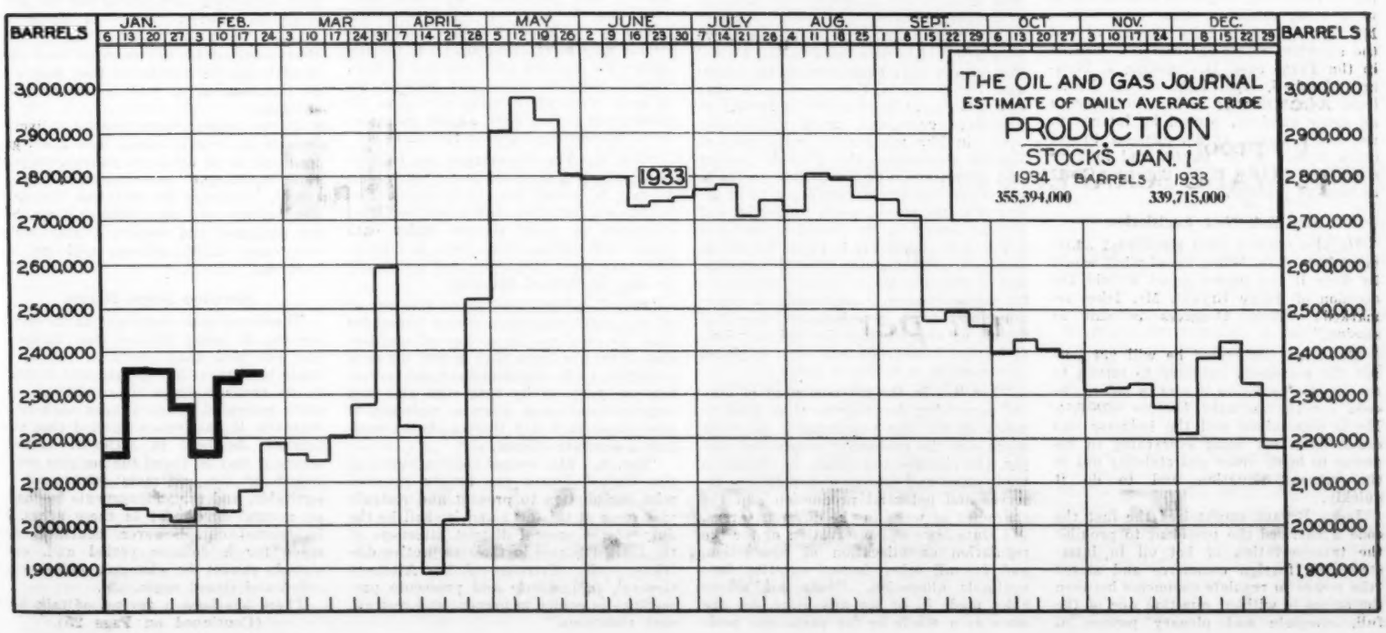
Operators in Southeastern New Mexico are asking for a greater allowable production due to the recent development of big wells in the Jal Pool, which have caused a considerable increase in the potential production of the Lea County fields.

Crude Oil Production in the United States

Estimated daily average production for the week ending February 17, and a comparison with previous week and one year ago, follows:

	Feb. 17	Feb. 10	Feb. 18, 1933
Oklahoma—			
Oklahoma City	174,860	206,365	127,310
Seminole-St. Louis	106,540	91,045	106,865
Remainder of State	213,680	207,530	194,105
Total Oklahoma	495,080	504,940	428,280
East Texas—			
Lathrop	200,395	197,625	114,949
Kilgore	145,650	141,835	91,353
Joiner	129,945	125,550	93,761
Total East Texas	475,990	465,010	300,063
West Texas	123,512	123,622	157,987
North Central Texas	86,425	83,635	71,792
Texas Panhandle	47,364	40,161	36,912
East Central Texas	43,246	43,124	58,745
Gulf Coast—Texas	158,015	156,573	130,246
Southwest Texas	43,447	41,310	53,535
Total State of Texas	977,999	953,435	809,280
Kansas	115,000	106,195	102,565
North Louisiana	28,245	27,640	28,760
Gulf Coast—Louisiana	45,172	47,498	33,595
Arkansas	31,585	31,230	31,645
Eastern Fields	122,250	123,700	106,000
Rocky Mountain area	79,230	79,140	76,273
California—			
Santa Fe Springs	40,600	43,250	53,750
Long Beach	59,500	63,500	68,000
Playa Del Rey	9,250	9,750	12,250
Elwood	12,000	11,000	13,750
Kettleman Hills	50,600	48,000	57,250
Remainder of State	288,800	293,500	262,000
Total California	460,750	469,000	467,000
Total United States	2,355,311	2,342,778	2,083,398

Increase 12,533 Bbls. Daily.



Signatures to Agreements Reported Received Representing 86 Per Cent of the Crude Runs

By ANDREW M. ROWLEY

WASHINGTON, D. C., Feb. 20.—Signatures already received on the pooling and marketing agreements assure that companies representing at least 86 per cent of the crude runs to stills of last November will approve these agreements and uniform contracts, thereby making them effective within the very near future. Only 85 per cent is necessary. As soon as the necessary number of signed agreements are received here they will be formally presented to Harold L. Ickes, oil administrator, who will make them effective by announcing his approval and the fact sufficient signatures have been received.

Secretary Ickes announced today a bill is being prepared to stop the loopholes in the petroleum code and give the administration power and authority to do those things necessary to stabilize the industry and to eliminate those factors which resulted in recent adverse court decisions.

WASHINGTON, D. C., Feb. 19.—Just as a pebble dropped into a pool of water will cause waves to spread over the entire surface of the pool, so the decision rendered last week by Judge Randolph Bryant in the Panama Refining Co. case has had a widespread effect on many matters of vital concern to the entire petroleum industry. There had been a slowing up in signing the pooling and marketing agreements with the uniform contracts approved at a meeting here 10 days ago; proponents of a higher allowable crude oil production for Texas are more confident they will succeed in having the permitted output in that state increased; other state authorities, particularly Oklahoma and Kansas, according to word from Tulsa, are preparing to retaliate if the Railroad Commission in Texas allows producers in that state a substantial increase in production; the petroleum administration is bending every effort to have questions involved decided by the U. S. Supreme Court; and, in the meantime, the entire industry is more or less at a standstill, trying to decide "just where it is at."

The entire petroleum industry is looking to Harold L. Ickes, oil administrator, more now, probably, than ever before. Mr. Ickes realizes fully the gravity of the situation resulting from the decision in the Texas case. His sending J. Howard Marshall, legal light of the Petroleum Administrative Board, to Tyler in an army airplane, proved he intends to use every means at his disposal to get quick action in the matter and to have a decision by the U. S. Supreme Court as soon as possible.

May Ask New Legislation

He also made a most significant statement last week. When asked what would be done if the higher court upheld the decision of Judge Bryant, Mr. Ickes remarked: "Well, Congress is still in session."

Mr. Ickes has stated he will not permit the petroleum industry to return to the chaotic condition it was in before the code for the industry became effective. He is determined and the industry can count upon his doing everything in his power to bring order and stability out of the present situation and to do it quickly.

Judge Bryant emphasized the fact the code authorized the president to prohibit the transportation of hot oil in interstate and foreign commerce and stated "the power to regulate commerce between the states is without question one of the full, complete and plenary powers of Congress." Knowing that the petroleum administration realizes control of crude oil production to consumer demand is the basic foundation of success of the operation of the code for the petroleum industry and stabilizatin of the oil business, it is felt, if other plans are not made effective, more stringent rules and regulations might be issued affecting shipments of petroleum and its products from those states which do not conform to production allowables set by the administrator.

It is conceded Congress has the power to regulate interstate commerce. Texas, Oklahoma and Kansas all ship crude oil and refined products to points outside those states, this crude oil and refined products being interstate commerce. It might be well for adherents of increased production to consider what might happen if the condition of the oil business as a whole, as a result of overproduction, became such the oil administrator might be forced to take some drastic action such as imposing heavy restrictions on shipments of crude oil and refined products from certain states.

The present state allowable in Texas is more than 41,000 bbls. daily above the allocation set for that state by the oil administrator. A state-wide proration hearing is being held today in Austin and E. B. Swanson, member of the Petroleum Administrative Board, will represent the petroleum administration at the hearing. There is a general feeling here the state allowable or allowable set by the Texas Railroad Commission of 925,154 bbls. daily will be increased. The matter is being watched closely, not only by officials here but by state authorities in Oklahoma and Kansas.

Truck Clause Causing Trouble

Efforts are being made to speed up the signing of the pooling and marketing agreements. The two were presented to the petroleum industry and the oil administrator as one proposition and really go hand in hand. The marketing agreement requires that it cannot become effective until refiners whose runs to stills in the United States during the month of November, 1933, amounting to at least 85 per cent of the total runs to stills during that same month, shall have become parties to the agreement and such fact is announced by the oil administrator. The agreements as redrafted at the meeting here 10 days ago will not be presented to the oil administrator for his approval until sufficient signatures are obtained.

Modifications made in the agreements and contracts, as redrafted, are not regarded as having changed those originally signed in any material way but a hesitancy was developed in signing them. One clause on uniform contract Form 4a, the official confirmation of acceptance and order of spot tank truck sales, probably has caused more discussion than any other feature of the contracts and is a good example of the attitude of many towards signing the contracts and agreements. That clause states "We hereby acknowledge receipt of your order for .....tank trucks (not less than 2,500 gallons or the maximum load permitted by law, if less, in one delivery) of..... motor fuel and we hereby confirm the acceptance of such order on the following terms and conditions, pursuant to which delivery will be made."

That part in brackets relating to the delivery of not less than 2,500 gallons in one delivery, except where a state law provides for less, is the stumbling block. The figure was set at 2,500 gallons, it is understood, to prevent transportation in small trucks of motor fuel manufactured from hot oil and to stop tax evasion. But many of the smaller refiners do not have tank trucks large enough to carry 2,500 gallons. Their trucks will carry 600 or 1,000 gallons but they cannot transport 2,500 gallons in one load. They have been losing money and are not in a financial position to purchase new and larger trucks to live up to this provision of the uniform contract. They ask what they are to do under the circumstances.

Jobbers who purchase from refiners may own their own trucks but the same condition prevails there in many instances. Their equipment is smaller than that required in the contract and they cannot use the equipment they now own as that equipment will not carry 2,500 gallons.

If the refiner cannot make deliveries because his trucks cannot hold 2,500 gallons and he is not in a position to junk this equipment and purchase larger trucks, naturally he will lose his present business and some other refiner, better equipped and owning trucks which can carry 2,500 gallons, will get the business.

Question About Margin

There was some complaint on the 6-cent margin, it being claimed that figure is too low and that provision should be made to change that margin and increase it to another figure if conditions and facts presented before proper authorities warrant. It has been suggested that conferences be held in different sections where it may be found the margins established by the contracts might not be equitable, and that adjustments be made, on mutual agreement in these areas. It is pointed out, however, contracts are made for a definite period and, once signed, cannot be changed, unless cancelled and signed again.

There has been a revival of talk here

(Continued on Page 25)

Bill Is Prepared for Congress Applying Hot Oil Ban to Intrastate Operations

A tentative bill has been prepared and is being considered by members of the Planning and Co-ordination Committee and other oil men. If such legislation is deemed necessary, the bill will be introduced in Congress. The draft follows:

"Section 1. The Department of the Interior is hereby designated as the Federal agency under this act.

"Sec. 2. It shall be the duty of the Federal agency to investigate and determine from time to time the facts necessary to enable the Federal agency to make the findings and orders provided for in this act.

"Sec. 3. Upon a finding by the Federal agency that interstate commerce in crude petroleum or the products thereof is injuriously affected by an excessive supply of crude petroleum in the United States, and that commerce in petroleum and the products thereof is such that any remedy, to be effective in respect to interstate commerce, must incidentally apply in like manner to intrastate and foreign commerce, the Federal agency may from time to time establish quotas in commerce for crude petroleum from all or any of the states, pools, properties and storage sources in the United States; and while such quotas are in effect no person shall place in commerce or receive in commerce (foreign, interstate, or intrastate) by sale, exchange, consignment or otherwise, any crude petroleum in excess of quota, or any product derived in whole or in part from crude petroleum so placed in commerce in excess of quota.

"Sec. 4. In the establishment of quotas hereunder, due consideration shall be given to (a) the requirements of trade areas and the customary sources of supply, (b) changes and trends in respect to trade areas and sources of supply, (c) reserves and potential production and the character of wells in the different areas, (d) state laws of conservation or for the regulation or allocation of production, and (e) all other factors entering into equitable allocation. Production allowables made in or for any state, for the state as a whole or for particular pools or properties, may be followed entirely or partially in the establishment of quotas hereunder, but quotas hereunder, as distinguished from production allowables, need not necessarily conform to production allowables, the purpose hereof being to prevent the movement in commerce of surpluses which would demoralize commerce, and to equitably distribute the business of supplying the product allowed to move.

"Sec. 5. Before establishing quotas hereunder the Federal agency shall hold hearings in regard to quotas and such other matters as in the opinion of the Federal agency may be proper, after such reasonable public notice as the Federal Agency may prescribe: Provided, however, that in any emergency, as determined by the Federal agency, temporary quotas may be established by the Federal agency for a period not exceeding 30 days, without previous notice and hearing, but in such event the Federal agency in the subsequent period shall adjust quotas so as to prevent injustice on the whole.

"Sec. 6. The Secretary of the Interior is empowered to issue such regulations as may be proper for the administration of this act, including regulations requiring operators to make reports under oath which will disclose such facts in connection with their properties and operations as may be deemed material.

"Sec. 7. Any violation of this act or of any valid regulation issued hereunder shall be punished by a fine of not less than $500 nor more than $5,000 for each violation, or by imprisonment not exceeding one year, or by both such fine and imprisonment, and when a violation is continuous each day thereof shall constitute a separate offense.

"Sec. 8. The several district courts of the United States are hereby invested with jurisdiction to prevent and restrain violations of this act; and it shall be the duty of the several district attorneys of the United States in their respective districts, under direction of the Attorney General, to institute and prosecute proceedings in equity to prevent and restrain such violations."

West Coast Marketers Bind Themselves to Follow Cartel Approved by Oil Administrator Ickes

By ANDREW M. ROWLEY

WASHINGTON, D. C., Feb. 19.—Secretary Ickes, oil administrator, has announced the approval of a proposed cartel agreement entered into by oil companies operating in the Pacific Coast and adjacent states, covering the manufacturing and marketing of gasoline and other oil products.

In approving the cartel, Administrator Ickes reserved his right to modify the sanction given to the agreement or to cancel it if he regards the operation of the agreement contrary to the public interest or injurious to small companies operating in the area, regardless of whether they were parties to it.

In addition, Administrator Ickes announced that he would appoint a representative to sit with the committee to be formed by the signatories for the purpose of supervising the operation of the agreement, this representative to have free access to all books and records of the committee.

The cartel agreement includes the marketing area embraced in the states of California, Oregon, Washington, Arizona and Nevada and the territories of Hawaii and Alaska.

The cartel allocates gasoline gallonage on the existing basis to all companies marketing in the region where it is effective.

The agreement, as approved by Administrator Ickes, was signed by companies representing 95 per cent of the gallonage sold in the area covered by its provisions.

Administrator Ickes made public the text of a letter from him to Mr. Wirt Franklin, chairman of the Planning and Co-ordination Committee, notifying him of the approval of the agreement, and the text of the formal order under the code of fair competition for the petroleum industry approving it. They follow:

Text of Letter

"My dear Mr. Franklin:

"I have received a letter dated January 30 from Mr. R. B. Brown, secretary of your committee, with which he transmitted to me an agreement, known as the Pacific Coast cartel, executed by certain companies manufacturing and/or marketing gasoline in the Pacific Coast region, embracing the states of California, Oregon, Washington, Arizona and Nevada, and the territories of Hawaii and Alaska.

"Mr. Brown also enclosed in his letter a certified copy of the minutes of the Planning and Co-ordination Committee dated January 30, 1934, setting forth a resolution unanimously approving the aforesaid cartel.

"I have carefully and impartially considered the provisions of the cartel, and I have approved the same, subject to the provisions of the National Industrial Recovery Act.

"I wish to point out to your committee at this time that the said cartel provides in Paragraph 33 thereof that I may terminate it upon the request of two-thirds of the companies in Groups A and B combined, or two-thirds of the companies in Group C, at any time after the expiration of 12 months from its date. This provision must, of course, be read in the light of Section 10 (b) of Title 1 of the National Industrial Recovery Act and of Section 5, Article 1 of the code of fair competition for the petroleum industry, which give the President power to cancel agreements of this type at any time. Section 10 (b) of the National Industrial Recovery Act provides further that any agreement made pursuant to the act must contain an expressed provision to that effect.

"I assume that, in as much as the group of companies which have executed this agreement did so pursuant to the provisions of the National Industrial Recovery Act, this section of the act must be deemed to be incorporated therein.

"While I have not deemed it necessary to modify my approval of the cartel in any way, it is my desire to appoint a representative to sit with the committee which is to be established pursuant to Section 4 of the cartel, which representative shall have free access to all of the books and records of the committee, and shall be notified of all meetings of the committee.

"Certain sections of the cartel, unless they are equitably construed, might cause undue hardship to persons who are not parties to the cartel, and who have no part in its management. For the most part, these parties are small companies, and if any undue hardship is caused them, the cartel will violate Section 3, Subsection (a), Title 1 of the National Industrial Recovery Act, which provides that such agreements must not be designed to promote monopolies or to eliminate or oppress small enterprises, or to operate to discriminate against them. I cannot permit this to be done, and I will direct my representative who shall sit with the committee to exercise every precaution to prevent such a result from obtaining.

"I believe that this agreement, if properly supervised and justly managed, will attain the end which is sought, namely, the prevention of unfair, unreasonable and wasteful competitive marketing practices, and the promotion of public interest through stabilization of the marketing operations of this essential industry, thus assuring consumers an adequate supply of gasoline at fair and reasonable prices.

"I assure you that I will give you every co-operation in attempting to make this experiment a success. However, I deem it essential to point out to you that under the provisions of the National Industrial Recovery Act and the code of fair competition for the petroleum industry I must reserve my rights to modify my approval of this agreement, or to cancel this agreement upon evidence that it is operating to discriminate against any person or group of persons within the industry, or that its operations are contrary to the public interest, and I inform you that the operations of this group of companies under the cartel will be subject to my closest scrutiny.

"I should appreciate it if you would forward to the persons who have executed the cartel a copy of this letter.

"With best wishes for success in this venture, I remain

"Sincerely yours,

(Signed) "HAROLD L. ICKES,

"Administrator of Petroleum Industry."

Text of Order

Whereas, certain members of the petroleum industry, manufacturing and/or marketing gasoline in the Pacific Coast region, including the states of California, Washington, Arizona and Nevada and the territories of Hawaii and Alaska, have entered into an agreement dated November 20, 1933, known as the Pacific Coast cartel, hereinafter referred to as the "cartel," designed to prevent unfair, unreasonable and wasteful competitive marketing practices and to promote the public interest through stabilization of the marketing operations of this essential industry, thus assuring consumers an adequate supply of gasoline at fair and reasonable prices; and

Whereas, an equitable method for the adjustment of unforeseen injustices has been provided in said cartel; and

Whereas, the cartel has been approved and recommended to me by the Planning and Co-ordination Committee, and suitable public notice thereof has been given pursuant to Section 5, Article 1 of the code of fair competition for the petroleum industry; and

Whereas, I have carefully and impartially considered this cartel and have found and determined that it is not designed to promote a monopoly or to eliminate or oppress small enterprises and will not operate to discriminate against them, and will tend to effectuate the policy of Title 1 of the National Industrial Recovery Act (Public No. 67-73d Congress) with respect to transactions in or affecting interstate or foreign commerce,

Now, therefore, pursuant to the authority vested in me by the provisions of the National Industrial Recovery Act, the code of fair competition for the petroleum industry and the President's order of August 28, 1933, and under, pursuant to and subject to the provisions of Section 3, Subsection (a), Clause 4, Section 4, Subsection (a) and Section 10, Subsection (b) of Title 1 of the said National Industrial Recovery Act, I hereby order that the agreement dated November 20, 1933, known as the Pacific Coast cartel, be and the same hereby is approved.

(Signed) HAROLD L. ICKES,
Administrator.

Promulgated February 13, 1934.

Text of Cartel

As the California marketing cartel was approved by Administrator Ickes the following provisions were made and with the original agreement a supplemental agreement was approved.

States Involved

The parties hereto, hereinafter referred to as "the companies," are engaged in the business of manufacturing and/or marketing gasoline in the States of California, Oregon, Washington, Arizona and Nevada, and the territories of Hawaii and Alaska.

Three Groups

For the purpose of this agreement, the companies are classified in three groups, according to their respective operating policies, designated respectively as "A," "B," and "C."

To the extent that changes in the status of any of the companies classified at date hereof in any one group make it necessary, in the judgment of the committee, that they be reclassed, said committee shall make such reclassification, subject, however, to ratification of two-thirds of the companies in Groups A and B combined, and two-thirds of the companies in Group C. It is provided, however, that no company or companies shall be thus reclassed from group designations as shown in "Schedule 1" hereof to

J. Howard Marshall Establishing Record for Hazardous "Hours in the Air"

WASHINGTON, D. C., Feb. 19.—J. Howard Marshall, member of the Petroleum Administrative Board and one of the outstanding legal lights of the petroleum administration, is rapidly establishing a record for "hours in the air" on government business connected with the oil industry. When legal tangles arise in the administration of the code, orders usually are given Mr. Marshall to rush by airplane to California, Texas or wherever the trouble exists. But he probably will remember his trip to Texas last week long after other journeys are forgotten.

Judge Randolph Bryant had rendered his decision in the Panama Refining Co. case. Administrator Ickes decided Marshall should go to Tyler, Tex., at once to safeguard the Government's interests. There were no commercial planes. President Roosevelt was apprised of the situation and he at once ordered the army to get a plane and take Marshall to Tyler. No one but the President can authorize a civilian to travel in an army airplane. It so happened no army plane was available. But orders were issued "to get a plane and get it quickly." The weather was extremely bad and the temperature was well below freezing. It was snowing in Washington and visibility—well, there just wasn't any visibility.

A statement was made it was about impossible to fly a plane under such conditions. Orders were given to fly anyway, the need was urgent and Marshall had to be in Tyler the next morning. Finally an open airplane was procured and Mr. Marshall rode from Washington to Tyler, Tex., in the cockpit. The trip did not seem to hurt him much for he accomplished his purpose on the morning of his arrival in Tyler.

Mr. Marshall left here the latter part

—Copyright Underwood & Underwood

J. HOWARD MARSHALL

of last week for Tyler to aid further in the Government's efforts to stop production of hot oil in East Texas.

a higher group (that is, from Group B to Group A, or from Group C to Group A or B), unless such company or companies shall have oversold the volume represented by the quota or quotas allocated thereto by more than 5 per cent in each of three consecutive calendar months; or reclassified to a lower group (that is, from Group B to Group C, or from Group A to Group B or C), unless such company or companies shall have undersold the volume represented by the quota or quotas allocated thereto by more than 5 per cent in each of three consecutive calendar months.

Intention of Parties

This agreement is made and entered into by the companies above named (which companies at date hereof supply not less than 95 per cent of the total quantity of gasoline sold in the Pacific Coast region).

It is the intention of the companies, and each of them, that they shall divide between them, separately in each state and territory, in the respective proportions elsewhere herein set forth, the total amount of gasoline sold by all of said companies to the trade located in each such state and territory. The basic purposes of this agreement are therefore (a) to establish, as between the parties hereto, fair and equitable proportionate allotments of that part of the current consumptive demand for gasoline currently supplied by all of the companies in each state and territory, and (b) to provide and define such regulations and conditions as are calculated to preserve and maintain, throughout the period hereof, that distribution of current gasoline demand, as between the companies, which will conform to the said proportionate allotments. To this end, sale and purchase adjustments as between companies will be made periodically, gasoline price differentials as between groups will be established from time to time, penalties will be imposed where necessary, and other appropriate action will be taken, all as elsewhere herein specifically provided.

Administration

1. The provisions of this agreement shall be administered by a committee of seven individuals, hereinafter termed "the committee." Three members of the committee shall be elected by the companies in Group A and Group B, combined, and three members shall be elected by the companies in Group C. For the purpose of this election, each company shall be entitled to one vote for each of the three members for whom it is eligible to vote, as provided in the preceding sentence. The six committee members so elected shall then elect the seventh committee member, and said seventh committee member shall be chairman of the committee. The three committee members elected by the companies in each of the respective groups, as herein provided, shall in each case be acceptable to a majority of the companies in the other group, to the end that all of the members finally elected to the committee may function harmoniously and effectively as a unit for the accomplishment of the purposes of this agreement. Individual committee members may be changed at any time by the companies, in the respective groups as hereinabove provided, upon the vote of two-thirds of said respective companies recalling an individual committee member elected by such group or groups and naming another in his place. The chairman of the committee, elected by the other six committee members as herein provided, may also be recalled at any time and another chairman elected in his place upon the vote of two-thirds of said other six committee members.

2. The committee as thus constituted is hereby empowered to perform all acts and do all things necessary for the accomplishment of the objectives of this agreement, as herein specifically provided, and the determinations and directions of the committee pursuant to this agreement shall be binding upon each and all of the parties to this agreement.

3. A quorum shall consist of two committee members elected by the companies in Groups A and B combined and two committee members elected by the companies in Group C. All acts of the committee shall require the vote of not less than two of the committee members representing the companies in Groups A and B combined and two of the committee members representing the companies in Group C.

4. The committee is hereby empowered to employ such clerical and technical assistance, purchase such equipment and supplies, and hire such offices as it shall deem to be necessary to the proper administration of this agreement and the performance of the duties hereby delegated to it. The committee shall, each month during the term of this agreement, estimate the amount of its expense hereunder for the ensuing month, and shall apportion said expense among the companies on the basis of their current quotas as defined in Paragraph 5 hereof and stated in "Schedule 2" hereof. The committee shall notify the companies of said apportionment, and the companies shall, immediately upon receipt of such notice, pay to the committee the respective amounts thus apportioned.

Establish Quotas

5. The total amount of gasoline sold in each state and territory in the Pacific Coast region in each month during the term hereof by all of the companies (exclusive of gasoline sold by any one or more of the companies to any other one or more of the companies), shall be divided, separately in the case of each such state and territory as between the companies, in the proportions specifically set forth in "Schedule 2" which is attached hereto and made a part hereof. The term "gasoline," as used in this agreement, is defined as any and all grades of gasoline, engine distillate and any other petroleum product sold as a substitute therefor for use as motor fuel. The companies hereby accept their respective quotas as set forth, and agree to so conduct their respective operations as at all times to maintain and not to exceed their respective quotas. Gasoline sold in the Pacific Coast region but delivered to points outside of said region shall not be subject to the provisions of this agreement.

6. Each and all of the said quotas shall be subject to change as specifically provided in Paragraphs 10, 11, 12 and 20(b) hereof, and not otherwise.

Obligation of Companies

7. The companies hereby assume full responsibility for the distribution and sale of their respective gasolines from the refinery to the ultimate consumer; they agree to enforce, on the part of their subsidiaries, affiliates, distributors, jobbers, agents, dealers, and all others by whom their gasoline may be distributed or resold, price maintenance and full observation of all other marketing policies and practices in strict conformance with the applicable specific provisions of this agreement and, in general, in a manner consistent with its purposes and intent, except to the extent that the companies are prevented from so doing under the terms and conditions of valid written contracts executed prior to November 1, 1933; provided, however, that all such contracts shall be cancelled or terminated as soon as any cancellation or termination thereof can be legally accomplished. In the case of parties to this agreement having subsidiary and/or affiliated companies which are themselves parties to this agreement, such subsidiary and/or affiliated companies shall themselves assume responsibility pursuant to the provisions of this paragraph, and to this extent only, the company or companies to which they are subsidiary or with which they are affiliated, shall be released from such responsibility as herein provided.

8. The companies, and each of them, hereby specifically agree that, during the period of this agreement, no one or more of the companies in any one group shall acquire, by contract, purchase, lease or otherwise, the exclusive business of any dealer or other retail outlet supplied at date hereof in whole or in part, by any one or more of the companies in any of the other groups.

9. It is expressly understood and agreed by the companies that during the period of this agreement no service stations shall be constructed, nor sites for same acquired, by any of the companies, in that the installation of additional retail gasoline marketing outlets is unnecessary and undesirable in view of the already over-extended condition of the retail marketing field for petroleum products, and would tend to increase the costs of the petroleum industry, contrary to the interests of the industry and of the general public, and contrary to the purpose and objectives of the code of fair competition for the petroleum industry.

Quotas May Change

10. In the event that any one or more of the companies shall hereinafter during the term of this agreement acquire by purchase, merger, or otherwise, the business of any other one or more of the companies, then the quota or quotas of the company or companies thus acquired shall be added to the quota or quotas of the company or companies so acquiring such business, unless the company or companies thus acquired continue to be operated as separate entities, in which event the status thereof as to quota and other provisions of this agreement will continue unchanged.

11. Any one or more of the companies may hereafter during the term of this agreement, upon written notification to the committee, establish as a separate entity hereunder any one or more subsidiary or affiliated companies now or hereafter to be formed and not herein specifically so named and established: provided, however, that in such event the total of the quotas of any such company and of its said subsidiary and affiliated companies thus established, shall not be more than the quota for said company as specifically named in Schedule 2 hereof, subject to changes, if any, then in effect, as elsewhere herein specifically provided.

12. It is expressly understood and agreed by the companies signing this agreement prior to its effective date, that any and all companies engaged in the refining and/or marketing of petroleum products in the Pacific Coast region shall have the right to become parties to this agreement at any time during the term hereof, either before or after the agreement shall have become effective, upon signing the said agreement and accepting its terms and conditions. In the case of companies thus becoming parties to this agreement subsequent to its effective date, the committee shall develop and recommend the quota of each new participant, and upon approval of the quota thus determined by two-thirds of the companies in Groups A and B combined and two-thirds of the companies in Group C, the volume represented by the quota thus determined and approved, shall be added to the total volume of all of the parties to this agreement, and the individual percentage quotas of each of the companies shall be adjusted to give effect to the total aggregate sales volume of all of the companies as thus increased.

13. It is expressly understood and agreed by the companies, and each of them, that they will not sell or otherwise supply gasoline (as defined in Paragraph 5 hereof), to any company or companies not so supplied at the date hereof who are not parties to this agreement, which company or companies are now or may hereafter during the term hereof be engaged in the manufacture and/or marketing of petroleum products in the Pacific Coast region, excepting only bona fide subsidiary and affiliated companies and distributors of a company or companies party to this agreement.

Application of Quotas

14. On or before the fifteenth day of each calendar month during the term hereof, each of the companies shall com-

(Continued on Page 30)

Federal Board Recommendation for Texas Is 947,900 Barrels During March

AUSTIN, Tex., Feb. 20.—E. B. Swanson, chief economist of the U. S. Bureau of Mines and member of the Petroleum Administrative Board, was the star witness at the Railroad Commission's hearing on state allowable production which opened Monday. Reasonable market demand was set in the Government's recommendation for March at 947,900 bbls. daily, representing a theoretical increase of about 63,900 bbls. over the former Federal figure of 884,000. It is an increase of 17,019 bbls. daily over the Texas Railroad Commission's current total allowable of 930,881 bbls.

Explaining the Government's method of compiling the demand, Mr. Swanson said reasonable market demand and consumer demand are arrived at by the same method and in effect are identical. He said the number of consuming units for gasoline, based on automobile registration, was multiplied by average consumption for the month over a long period, to which were added other figures to give the total.

Texas' March Totals

For Texas in March these worked out a total of 29,384,000 bbls. or the 947,000 bbls. daily average. Included are gasoline exports; filling the requirements of the Eastern Seaboard for refinery supplies, Texas having about 40 per cent of this market; natural gasoline requirements; fuel oil used in fields; refinery demands in Louisiana, Arkansas, Oklahoma, Indiana, Illinois, Kentucky and Appalachian and Rocky Mountain districts and the amount required by Texas refineries. Mr. Swanson's gasoline figures for December were only one-tenth of 1 per cent too low, the economist explaining that they were based on long-time trends. Cross questioning developed that while no provision was made for a sudden increase in demand in one month, it might be taken care of the next.

There is no provision to permit refiners and others to buy crude for storage in anticipation of a price raise, no speculative operations being allowed in the oil administration's figures, Mr. Swanson said.

While imports increased in some months of 1933 over the corresponding months of 1932, exports considerably exceeded imports.

California Shipments

Commissioner E. O. Thompson questioned Mr. Swanson on Panama Canal shipments westward and eastward, the shipments toward the Atlantic being about 18,000,000 bbls. more in last year's report. The purchase by a Standard company of 12,000,000 bbls. of fuel oil in the West Coast was explained by Mr. Swanson as having been arranged before Federal control became effective. The movement of California oil through the canal was not taken into consideration in figuring California demand, Mr. Swanson said, describing this movement as chiefly one of fuel oil from storage to storage of no significance in finding market demand.

In his testimony Mr. Swanson indicated that no weight was given speculative demand, or to price. Imports are figured on an average of 67,000 bbls. per day, which is the present limited quota figure.

It was reported the commission favored fixing the next state allowable around 950,000 bbls. daily.

Tanker Rates and Canal Tolls Important Factors in Determining Markets of Foreign Oils

By VALENTIN R. GARFIAS
Foreign Oil Department, Henry L. Doherty & Co.*

With the exception of the United States and Russia none of the leading world powers have within their boundaries the oil supplies needed to meet present peace-time requirements and even in the case of the United States, it is admitted by competent observers, that the known oil reserves within the country are inadequate to meet demands for more than a comparatively few years. It follows, therefore, that the transportation of petroleum—almost entirely by tank steamers—from foreign fields to the main consuming centers is one of the most important factors affecting the present and future development of the oil industry.

The world-wide distribution of petroleum is affected by numerous factors of which international politics is not the least important. The assurance, of an ample supply of petroleum—one of the most essential munitions of war—is of paramount importance particularly to those countries subjected to the rivalries of powerful neighbors. And paralleling the importance of the control of an ample supply is that of its safe transportation from the fields to the consuming centers. To illustrate: France is dependent almost entirely on foreign sources for its petroleum requirements estimated at close to 100,000 bbls. daily and in order to control such a supply it acquired, after the World War, an interest in Iraq oil fields. It has lately undertaken the construction of a pipe line from these fields to the Mediterranean Seaboard in Syria with the expectation that late in 1934 these fields will supply between 30 and 40 per cent of the country's requirements. It should be noted, however, that the availability of this supply is entirely dependent on the safe operation in the Mediterranean at all times of an adequate fleet of tank steamers. Thus, in order to transport 40,000 bbls. daily, it will be necessary for one 10,000-ton tanker to leave Tripoli, the Syrian port, say for Marseille every other day throughout the year while to meet the entire present peace requirements of France, from the Iraq fields, a fleet of some 30 such tankers must be kept in continuous operation between Tripoli and Marseille.

Exporting and Importing Centers

In listing the exporting and importing producing centers that go to make Table 1 the most important oil ports in the leading petroleum producing and consuming countries were selected. Owing to the meager information available regarding the oil fields in the East Indies it was decided to list the refining and shipping centers of Balik-Papan, Lutung and Palembang even if any one of the three would have given substantially the desired information. It will be noted that Russia, the second ranking country as consumer of petroleum was not listed as importer as it does not utilize foreign oil products. It may also be pointed out that some of the exporting centers are not located within the oil producing countries. Curacao, for instance, through which the bulk of the Venezuelan oil is exported is not in Venezuelan territory nor are Haifa or Tripoli—the English and French terminals of the pipe lines connecting the Iraq fields to Mediterranean seaboards—located in Iraq.

Table 1 illustrates the general misconception existing in the public mind regarding the relative geographical location and therefore of the distance between given points on the earth's surface. This is largely due to the distorted picture resulting by projecting on the flat surface of maps the terrestrial distances and areas. It may therefore be surprising to some to ascertain through this table that the harbors in northwestern Europe, such as London, Hamburg and Stockholm are practically equidistant from New York, Constanza and the new oil harbors of Haifa and Tripoli and that as regards the cost of marine transportation—which if it does not involve canal tolls, and everything else is equal, varies in direct ratio with the distance between terminal harbors—it is of equal advantage for the consumer, say in London, to buy oil from the American or Rumanian fields or from those in Iraq once they are connected to Mediterranean by pipe lines. It may also be noted that the Mediterranean markets of Italy, France and Spain are not nearer to Haifa or Tripoli than to Constanza, that the fields of Colombia and Venezuela are if anything nearer to New York than are those of the Texas Gulf Coast and that the New York oil market is not nearer to California than to the Rumanian oil fields. These examples presented at random are given as suggestions for a closer study of Table 1, which shows the distance in nautical miles between the most important exporting and importing oil centers.

Tank Steamers

There are now in operation close to 1,680 tanker steamers more than half of which will load on an average considerably less than 50,000 bbls. The tank steamers commonly employed in the international oil trade on the other hand have carrying capacities in excess of 70,000 bbls. The number of such tankers which aggregates 625 and their average individual carrying capacities follows:

No. of tankers	Carrying capacity in U. S. barrels
200	75,000
165	85,000
80	95,000
180	over 100,000

After careful consideration of the various factors involved, and notwithstanding the fact that outside of certain restricted routes it is about 30 per cent cheaper to operate a foreign than an American tanker, it was decided to select as the type best suited to give a uniform basis for comparing the cost of marine transportation of petroleum, a tank steamer of American registry of 10,000 deadweight tonnage having a net carrying capacity of 75,000 bbls. operated under the following conditions:

Cost of tanker per D.W.T.	$50
Interest on investment	6%
Insurance rate	5½%
Maintenance, per day	$60
Stores, per day	$20
Wages, per day	$100
Provisions, per day	$35
Overhead, per day	$15
Fuel at 75c per bbl., per day	$150
Port charges, per trip, per day	$1,500
Speed, knots per hour	10
Number of crew	40
Days in port per trip	6

Canals and Canal Tolls

As before stated the cost of marine transportation varies directly with the distance between terminal harbors and it thus follows that the use of canals that shorten such distance is economical whenever the canal tolls represents a saving over the added cost of the longer route which eliminates the use of the canal.

The oldest of these sea lanes shortcuts is the sea-level Suez Canal owned and operated by a very lucrative semi-private enterprise, which to date retains some of the characteristics of a successful monopoly. Its tolls at times have forced some of the Oriental trade, including Persian oil, to be again routed "around the Cape" on its way to northwestern Europe. To an American company which pays now in devaluated dollars, the Suez round-trip tolls of 9 "gold francs" per ton would be equivalent to 20 United States cents per crude oil barrel or 9 cents more than the Panama tolls. Conversely a French company will now pay considerably less in francs than formerly for the Panama Canal tolls. Before the devaluation of the dollar the Suez and Panama tolls were about 12 and 11 cents per barrel of crude oil, respectively. The Kiel Canal is operated practically at cost with the result that the tolls per round trip of a 10,000-ton tanker aggregate only about 2¼ United States cents per crude oil barrel. The following data gives the salient features of the canals commonly utilized in the international oil trade:

	Canal		
	Suez	Kiel	Panama
Opened to traffic	1869	1895	1914
Length, miles	104	53	40
Minimum draft, feet	33	29	36
Time of crossing, hours	15	8	8
Traffic in tons:			
1930	28,511,000	22,027,000	30,030,000
1931	25,322,000	20,684,000	25,083,000
1932	23,632,000	12,851,000	19,308,000
Tolls per registered ton loaded	*8	†.231	$1.25
Tolls per registered ton in ballast	*3	†.193	$.75
Round trip tolls per barrel of crude oil	$.20	$.035	$0.12

*Gold francs. †Reich marks.

As there is now a marked tendency to import crude oil for refining in the consuming countries, it was thought advisable to convert into United States cents per barrel of crude oil the Suez, Kiel and Panama rates which are actually collected on gold francs, Reich marks and dollars per ton, respectively. It should be kept in mind in this connection that owing to the difference in weight per barrel, the same tanker is able to transport say more barrels of gasoline than of crude oil.

Cost of Marine Transportation

It is interesting to note that the only pay cargo of a tanker is petroleum and its products transported generally "one way" from producer or refiner to consumer. Furthermore, tank steamers can only be used economically when transporting certain types of oil for considerable time. Thus a "dirty tanker" on the

*Before A.I.M.E. annual meeting, New York, February 20, 1934.

TABLE 1—DISTANCES IN NAUTICAL MILES BETWEEN PRINCIPAL OIL EXPORTING AND IMPORTING CENTERS

		United States					East Indies								
		New York	Texas ports	San Francisco	Russia Batum	Venezuela Curacao	Persia Abadam	Balik Papan	Lutung	Palembang	Mexico Tampico	Colombia Cartagena	Peru Talara	Iraq Haifa	
1	Antwerp	3,414	5,057	8,096*	3,751	4,150	6,611‡	9,396‡	8,975‡	8,615‡	5,119	4,508	5,663*	3,394	Antwerp
2	Barcelona	3,721	5,265	8,136*	2,085	4,194	4,925‡	7,709‡	7,289‡	6,929‡	5,361	4,536	5,699*	1,783	Barcelona
3	Buenos Aires	5,871	6,504	8,738*	7,735	4,752	9,028	9,779	9,833	9,328	6,518	5,150	4,590	7,378	Buenos Aires
4	Cape Town	6,786	7,519	9,890	6,782‡	5,770	5,240	6,000	6,054	5,549	7,464	6,165	7,320*	5,549‡	Cape Town
5	Copenhagen	3,846†	5,499†	8,528*†	4,188†	4,620†	7,048‡†	9,835‡†	9,415‡†	9,055‡†	5,542†	4,940†	6,095†	3,831†	Copenhagen
6	Durban	7,599	8,319	10,500	6,023‡	6,520	4,361	5,300	5,337	4,837	8,264	6,965	8,120*	4,753†	Durban
7	Genoa	4,062	5,606	8,477*	1,899	4,535	4,815‡	7,544	7,124	6,764	5,709	4,877	6,040*	1,529	Genoa
8	Hamburg	3,676	5,329	8,358*	4,018	4,450	6,878‡	9,665‡	9,245‡	8,885‡	5,372	4,770	5,925*	3,661	Hamburg
9	Havre	3,220	4,478	7,898*	3,575	3,970	6,402‡	9,159‡	8,769‡	8,409‡	5,050	4,314	5,469*	3,186	Havre
10	Hong Kong	11,607‡	11,210*	6,043	7,863‡	9,937*	5,322	1,700	915	1,250	10,665*	9,519*	9,500	6,593‡	Hong Kong
11	Honolulu	6,702*	6,321*	2,091	11,428	5,427*	9,739	5,200	5,300	6,200	6,213*	5,009*	4,806	11,089*	Honolulu
12	London	3,369	5,022	8,051*	3,676	4,120	6,541‡	9,386‡	8,965‡	8,605‡	5,154	4,463	5,618*	3,324	London
13	Marseilles	3,897	5,141	8,312*	2,001	4,370	4,849‡	7,633‡	7,213‡	6,853‡	5,540	4,712	5,875*	1,707	Marseilles
14	Montreal	1,580	3,159	6,459*	5,564	2,700	8,439‡	11,211‡	10,791‡	10,431‡	3,301	2,550	4,015*	5,207	Montreal
15	Naples	4,184	5,728	8,596*	1,600	4,670	4,445‡	7,229‡	6,809‡	6,449‡	5,824	4,999	6,163*	1,194	Naples
16	New York	.....	1,898	5,262*	5,603	1,769	8,450‡	11,328‡	10,808‡	10,448‡	2,030	1,853	2,829*	5,578	New York
17	Rio de Janeiro	4,770	5,366	7,637*	6,530	3,650	8,521‡	9,308	9,362	8,857	5,417	4,048	5,204*	6,223	Rio de Janeiro
18	Rotterdam	3,415	5,068	8,080*	3,758	4,166	6,678‡	9,395‡	8,975‡	8,615‡	5,117	4,492	5,647*	3,401	Rotterdam
19	Shanghai	10,573*	10,168*	5,387	8,672‡	9,298*	6,046	1,800	1,650	2,210	10,028*	8,880*	9,467	7,408‡	Shanghai
20	Stockholm	4,176†	5,829†	8,858*†	4,518†	4,950†	7,378‡†	10,165‡†	9,745‡†	9,385‡†	5,872†	5,270†	6,425†*	4,161†	Stockholm
21	Sydney	9,691*	9,330*	6,744	9,693‡	8,416*	7,364	4,206	4,600	4,006	9,209*	7,998*	6,750	8,485‡	Sydney
22	Valparaiso	4,633*	4,152*	5,140	9,389*	3,358*	10,122	10,107	10,161	9,656	4,144*	2,940*	1,804	9,036*	Valparaiso
23	Vancouver	6,049*	5,568*	812	10,805*	4,774*	10,818	6,487	6,433	7,000	5,115*	4,356*	4,742	10,448*	Vancouver
24	Wellington	8,522*	8,370*	5,905	10,614‡	7,247*	8,291	4,700	5,200	5,000	7,988*	6,829*	5,742	9,203‡	Wellington
25	Yokohama	9,695*	9,317*	4,536	9,364‡	8,424*	6,762	2,700	2,300	3,000	9,165*	8,006*	8,429	8,127‡	Yokohama

*Panama Canal. †Kiel Canal. ‡Suez Canal.
Distance from Constanza, 392 miles less than from Batum. Distance from Tripoli, same as from Haifa.

heavy crude oil run from Tampico to New York will require the expenditure of close to $25,000 before it can be utilized as a "clean tanker" in the trnasportation, say, of gasoline.

Table 2 gives the number of days required by the typical tanker to complete a hypothetical round trip which is the shortest between the ports in question. The figures imply—what is not always the case—that the boat uses the same route on the return trip and that all such routes are actually followed by tanker fleets. Whenever canal transportation is utilized, it is so shown in the table. In each case the number of days given include six days "in port" per round trip in which the cargo is loaded and unloaded and minor repairs are attended to.

Table 3 shows the cost per round trip of transporting crude oil in the typical American tanker—it should again be noted that foreign boats operate about 30 per cent cheaper than those under American registry—between the most important exporting and importing centers; it is based on the cost of operating said tanker during the days as shown in Table 2 required for the shortest round trip; canal tolls, if any, are included in Table 3 which gives the cost on the basis of United States cents per barrel. The figures in this table are of necessity but approximately accurate. In actual practice obviously many of the routes shown are seldom if ever followed; also it should for instance, be possible to charter a tanker at a lower rate for a number of trips than for only one. Again, the newer and larger tankers which carry as much as 163,000 bbls. naturally operate more economically in certain routes than the type of tanker here selected. Also an oversupply of tankers, an undersupply of oil or a low consumption in a particular region of all or any one product may limit or reduce exports and compel the rerouting of oil shipments. Thus the fields in the East Indies are limited in their production of kerosene which finds a ready market in the Orient, by their inability in disposing of the gasoline which is obtained in manufacturing the marketable product. This and many other similar considerations notwithstanding, it is believed that Table 3 shows — not the actual charter rates throughout the world at any one time— but what it intends to show: The basis for a comparative study of the effect of tanker rates and canal tolls in determining the marketing range of foreign oils. It is only with these limitations in mind that the data herein contained should be interpreted. Finally it should be kept continually in mind that the cost of operating tank steamers under foreign registry is about 30 per cent lower than under the American flag and that as a result, American tankers can successfully compete with foreign boats only when plying between American harbors. In actual practice therefore the figures in Table 3 will reflect quite closely the cost of transportation between American harbors, San Francisco or Texas ports to New York, for instance, and also, say between Tampico, Cartagena or Curacao and the American harbors in the Gulf or the Atlantic Seaboard. On the other hand, the transatlantic, transpacific, European and Oriental routes are obviously controlled by the cheaper built and operated foreign tanker.

Federal Government to Press Plans for Stabilization of the Oil Industry

BY ANDREW M. ROWLEY

WASHINGTON, D. C., Feb. 19.—Notice that the Government would continue all possible efforts to enforce the oil code and orders curtailing the production of crude petroleum to conserve the supply and to protect the states supplying the interstate market, although seriously crippled by a recent court decision in Texas, was given today by Harold L. Ickes, oil administrator.

"The decision by Judge Randolph Bryant in the United States Court for the Eastern District of Texas, struck a paralyzing blow at the conservation and stabilization program embarked upon by the oil industry and the administration," Administrator Ickes said. "While this decision, handed down Monday last, held the code and regulatory orders unconstitutional, I hope it will prove to be only a temporary setback and will not result in wrecking the program. Under present laws and by virtue of this decision, the Government's hands are virtually tied. Our agents can only sit by and watch violations in Texas that will play havoc in other states.

"Under my instructions, the attorneys of the Petroleum Administrative Board are taking the steps necessary to bring the issues involved in Judge Bryant's decision before the Supreme Court of the United States at the earliest possible moment. J. Howard Marshall, member of the board, has been sent back to Texas by me to expedite this action. In the meantime, I will do everything that can be done, within court limitations, to prevent other states from being destroyed by a wild outpouring of Texas oil.

"There is far more at stake than the interests of a selfish minority of Texas operators. The interest of every State in which oil is produced is virtually involved. Their rights will be impaired if the reckless conduct of a ruthless handful of Texas companies shall go uncurbed. Homer Hoch, chairman of the Kansas Public Service Commission, and Paul Walker, chairman of the Oklahoma Corporation Commission, personally have presented an appeal for their states that the administration shall not permit a small group of law-violating operators in Texas or elsewhere to destroy the entire oil industry and the interstate market. Others have telegraphed and written similar appeals to me.

"Accurate figures prepared by the U. S. Bureau of Mines prove conclusively that 85 per centum of the crude petroleum produced in Texas moves into the national, interstate market. Should Texas' production be allowed to upset the balance between supply and consumptive market demand, as established by the oil administration through proven figures, chaos would result. No other state could be expected to stand idly by and allow Texas to seize unjustly another state's fair share of the demand needs. The other states would open their wells, the lid would be off and the law of the jungle again in force. We have but recently gone through some three years under the law of the jungle and we know the destruction and the calamity that follow it. Texas would be wrecked as well as the other states, and in a few days the interstate market for petroleum and its products would be completely demoralized, as it was barely six months ago.

"In Section 9 (c) of the National Industrial Recovery Act, Congress declared as its policy that the movement of 'hot' or illegally produced oil into interstate commerce shall be prohibited. Congressional representatives of the oil-producing states championed this declaration. In view of this expression by Congress, reinforced by the industry in the oil code, that the menacing flow of hot oil must be stopped, I feel that it is my duty to utilize every way remaining open to achieve that end."

NEW MICHIGAN ASSOCIATION

MUSKEGON, Mich., Feb. 17.—Independent oil producers of Michigan formed the Michigan Independent Petroleum Association, to fight the proposed new securities act scheduled to be considered at a special session of the state legislature. Charles Van Keuren, of St. Joseph, was elected president; J. Mark Harvey, of Detroit, vice president; Walter L. McClanahan, of Mount Pleasant, secretary, and W. J. Sovereign, Bay City, treasurer. James P. Dunnigan, of Mount Pleasant, was chairman of the meeting attended by about 100 independent operators.

TABLE 2—DAYS REQUIRED FOR ROUND TRIP

		New York	Texas ports	San Francisco	Batum	Curacao	Abadam	Balik Papan	Lutung	Palembang	Tampico	Cartagena	Talara	Haifa		
1	Antwerp	34.8	48.1	73.9*	37.3	40.5	61.5‡	84.7‡	81.2‡	78.1‡	48.7	43.5	53.4*	34.3	Antwerp	1
2	Barcelona	37.0	49.9	74.2*	23.3	40.9	47.5‡	70.6‡	67.1‡	64.1‡	50.7	43.8	53.8*	20.8	Barcelona	2
3	Buenos Aires	54.9	60.2	81.0*	70 5	45.5	81.3	87.5	87.9	83.7	60.3	48.9	44.2	67.5	Buenos Aires	3
4	Cape Town	62.5	68.7	88.4	62.9‡	54.1	49.7	56.0	56.5	52.2	68.2	57.3	67.3*	52.5‡	Cape Town	4
5	Copenhagen	38.9†	51.8†	77.7*†	41.2†	44.9†	65.4‡†	88.6‡†	85.1‡†	82.1‡†	52.6†	47.6†	57.2†	38.1†	Copenhagen	5
6	Durban	69.3	75.3	93.5	56.5‡	60.2	62.3	50.1	50.5	46 2	74.9	64.0	74.0*	46.0‡	Durban	6
7	Genoa	39.9	52.7	76.9*	21.8	43.9	46.5‡	68.8	65.3	62.3	53.5	46.6	56.7*	18.7	Genoa	7
8	Hamburg	36.6	50.4	76.0*	39.5	43.1	63.7‡	87.0‡	83.4‡	80.5‡	50.8	45.7	55.8*	36.5	Hamburg	8
9	Havre	32.8	43.3	72.1*	35.7	39.1	59.7‡	83.0‡	79.5‡	76.5‡	48.1	41.9	52.0*	32.6	Havre	9
10	Hong Kong	103.6*	99.5*	56.3	71.9‡	89.1*	50.3	20.0	13.6	16.4	95.1*	85.7*	85.1	61.4‡	Hong Kong	10
11	Honolulu	62.2*	57.9*	23.4	101.2	51.4*	87.1	49.3	50.1	57.7	58.1*	48.0*	46.0	98.7*	Honolulu	11
12	London	34.0	47.9	73.4*	36.6	40.3	60.9‡	84.7‡	81.0‡	78.1‡	48.9	43.1	53.1*	33.7	London	12
13	Marseilles	38.5	48.9	75.6*	22.7	43.4	46.9‡	70.0‡	66.5‡	63.5‡	52.1	45.2	55.3*	20.2	Marseilles	13
14	Montreal	19.1	32.3	60.1*	52.3	28.5	76.7‡	99.9‡	96.4‡	93.4‡	33.5	27.2	39.8*	49.3	Montreal	14
15	Naples	40.9	52.7	78.0*	19.3	44.9	43.4‡	66.7‡	63.1‡	60.1‡	54.5	47.6	57.7*	15.9	Naples	15
16	New York	....	21.8	50.1*	52.7	20.7	76.8‡	100.0‡	96.5‡	93.5‡	22.9	21.4	30.0*	52.5	New York	16
17	Rio de Janeiro	46.0	50.7	70.0*	60.8	36.4	77.4‡	83.5	84.0	79.8	51.1	39.7	49.7*	57.8	Rio de Janeiro	17
18	Rotterdam	34.5	48.3	73.6*	37.3	40.7	61.4‡	84.7‡	81.3‡	78 2‡	48.7	43.4	53.4*	34.3	Rotterdam	18
19	Shanghai	94.4*	91.2*	50.9	78.7‡	83.8*	56.3	21.0	19.7	24.4	89.9*	80.2*	84.9	68‡	Shanghai	19
20	Stockholm	41.0†	54.5†	80.4*†	43.9†	47.7†	68.1‡†	91.3‡†	87.9‡†	84.9‡†	55.3†	50.3†	60.1*†	41†	Stockholm	20
21	Sydney	87.1*	83.9*	62.2	87.2‡	76.5*	67.3	41.9	44.3	39.3	83 0*	73.0*	62.2	77.0‡	Sydney	21
22	Valparaiso	44.8*	40.9*	48.8	84.6*	34.3*	90.3	90.2	90.7	86.5	40.8*	30.8*	21.0	81.7*	Valparaiso	22
23	Vancouver	56.6*	52.6*	12.7	96.3*	46.1*	96.1	60.0	59.6	64.3	49.0*	42.6*	45.5	93.4*	Vancouver	23
24	Wellington	77.2*	76.0*	55.2	94.9‡	66.6*	75.1	45.1	49.3	47.6	73.0*	63.1*	53.8	83.0‡	Wellington	24
25	Yokohama	87.2*	84.0*	43.8	84.4‡	76.5*	63.3	28.5	25.1	31.0	82.7*	73.0*	76.2	74.1‡	Yokohama	25

*Panama Canal. †Kiel Canal. ‡Suez Canal.
Days required for round trip from Tripoli, same as from Haifa.
Days required for round trip from Constanza, 3.25 less than from Batum.

TABLE 3—COST OF TRANSPORTING CRUDE OIL IN TANK STEAMERS

(U. S. cents per barrel)

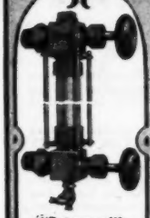
		New York	Texas ports	San Francisco	Batum	Curacao	Abadam	Balik Papan	Lutung	Palembang	Tampico	Cartagena	Talara	Haifa		
1	Antwerp	.30	.41	.73*	.32	.35	.72‡	.91‡	.88‡	.85‡	.41	.38	.57*	.30	Antwerp	1
2	Barcelona	.32	.43	.74*	.21	.35	.60‡	.80‡	.77‡	.74‡	.43	.38	.57*	.19	Barcelona	2
3	Buenos Aires	.47	.61	.79*	.60	.39	.69	.74	.74	.70	.51	.42	.38	.57	Buenos Aires	3
4	Cape Town	.53	.58	.74	.74‡	.46	.42	.47	.47	.45	.58	.48	.68*	.65‡	Cape Town	4
5	Copenhagen	.36†	.46†	.78*†	.37†	.40†	.77‡†	.95‡†	.93‡†	.91‡†	.47†	.43†	.50†	.35†	Copenhagen	5
6	Durban	.58	.64	.78	.68‡	.51	.35	.43	.43	.40	.63	.54	.73*	.60‡	Durban	6
7	Genoa	.35	.45	.76*	.20	.38	.60‡	.58	.55	.53	.46	.40	.59*	.18	Genoa	7
8	Hamburg	.32	.43	.75*	.34	.37	.74‡	.93‡	.90‡	.88‡	.43	.40	.59*	.32	Hamburg	8
9	Havre	.29	.37	.72*	.31	.34	.70‡	.90‡	.87‡	.84‡	.41	.36	.55*	.28	Havre	9
10	Hong Kong	.97*	.94*	.48	.81‡	.86*	.43	.74	.13	.15	.91*	.83*	.72	.72‡	Hong Kong	10
11	Honolulu	.64*	.60*	.21	.85	.55*	.72	.48	.43	.49	.61*	.52*	.40	.94*	Honolulu	11
12	London	.30	.41	.73*	.32	.35	.71‡	.91‡	.88‡	.86‡	.42	.37	.56*	.29	London	12
13	Marseilles	.33	.42	.75*	.21	.37	.60‡	.79‡	.76‡	.74‡	.44	.39	.58*	.18	Marseilles	13
14	Montreal	.18	.28	.62*	.45	.25	.84†	1.03‡	1.00‡	.98‡	.30	.24	.46*	.42	Montreal	14
15	Naples	.35	.46	.77*	.19	.38	.57‡	.77‡	.73‡	.71‡	.47	.41	.61*	.15	Naples	15
16	New York	....	.20	.54*	.45	.19	.84†	1.03‡	1.01‡	.98‡	.21	.19	.38*	.45	New York	16
17	Rio de Janeiro	.40	.43	.70*	.52	.31	.85‡	.70	.70	.67	.43	.35	.54*	.49	Rio de Janeiro	17
18	Rotterdam	.30	.41	.73*	.32	.35	72‡	.91‡	.88‡	.85‡	.42	.37	.56*	.30	Rotterdam	18
19	Shanghai	.90*	.87*	.44	.86‡	.81*	.48	.20	.18	.21	.86*	.78*	.71	.77‡	Shanghai	19
20	Stockholm	.37†	.49†	.80*†	.40†	.43†	.79‡†	.98‡†	.96‡†	.93‡†	.49†	.44†	.64†*	.37†	Stockholm	20
21	Sydney	.84*	.81*	.53	.93‡	.75*	.57	.36	.38	.33	.81*	.73*	.52	.85‡	Sydney	21
22	Valparaiso	.49*	.46*	.42	.82*	.42*	.75	.75	.76	.73	.46*	.39*	.19	.80*	Valparaiso	22
23	Vancouver	.59*	.56*	.12	.92*	.51*	.80	.61	.51	.54	.53*	.48*	.39	.89*	Vancouver	23
24	Wellington	.75*	.74*	.47	1.00‡	.67*	.84	.39	.42	.41	.73*	.64*	.46	.90‡	Wellington	24
25	Yokohama	.84*	.82*	.38	.90‡	.76*	.63	.25	.23	.27	.81*	.72*	.64	.82‡	Yokohama	25

*Panama Canal. †Kiel Canal. ‡Suez Canal.
Haifa rates apply also to Tripoli. Constanza rates about 1¼ cents lower than Batum.

Hydraulic Ejector

PENBERTHY PRODUCTS

Steam Ejector


"Safeguard" Automatic Liquid Level Gage

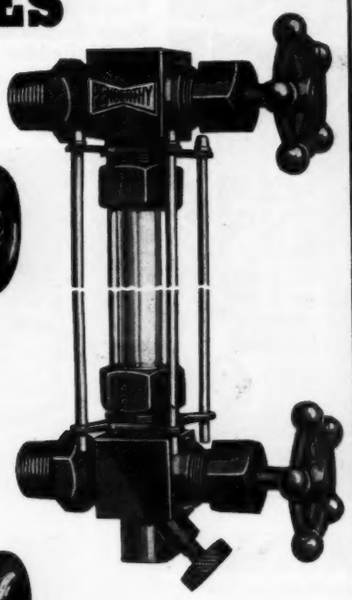
Automatic Injector

PENBERTHY LIQUID LEVEL GAGES

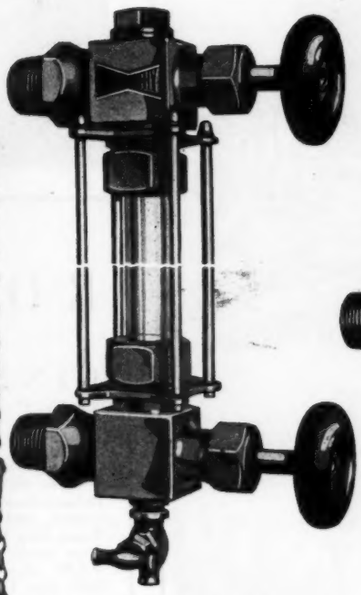
MEET ALL OIL INDUSTRY NEEDS

"Navy Type" Liquid Level Gage

Gas Engine Lubricator



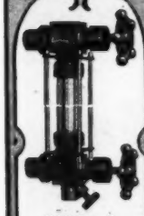
"ALL IRON"
500 LBS. WORKING PRESSURE
750° F.



"SAFEGUARD"
300 LBS. WORKING PRESSURE
500° F.

"NAVY TYPE"
350 LBS. WORKING PRESSURE
500° F.

PENBERTHY PRODUCTS


"All-Iron" Automatic Liquid Level Gage

Snap Lever Oiler

THE three gages shown here are very popular in the oil industry because of their consistently dependable operation. All of them are ruggedly built of the highest grade materials by an organization that has had 48 years experience in the manufacture of quality products. The "Navy Type" is made from Navy Bronze Composition M, the "Safeguard" from high grade steam metal bronze and the "All Iron" from a modern electric iron alloy.

All these gages have automatic shut-off. Both upper and lower body have ball check valves that seat immediately and positively to prevent the loss of liquid when glass is broken. The hand operated stop valves may then be closed with safety and a new glass inserted.

Each gage is carefully tested and rigidly inspected at the factory. For detailed descriptions write for a copy of the new catalog.

Penberthy Liquid Level Gages are carried in stock by supply houses everywhere.

PENBERTHY INJECTOR COMPANY

DETROIT, MICHIGAN
WINDSOR, ONTARIO

MANUFACTURERS OF QUALITY PRODUCTS SINCE 1886

Automatic Cellar Drainer (Water or Steam Operated)

Automatic Electric Sump Pump

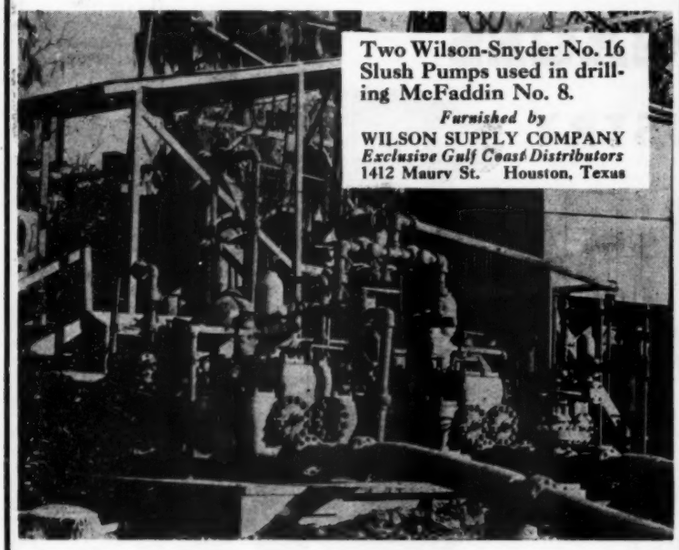
Spring Compression Grease Cup

Plain Compression Grease Cup

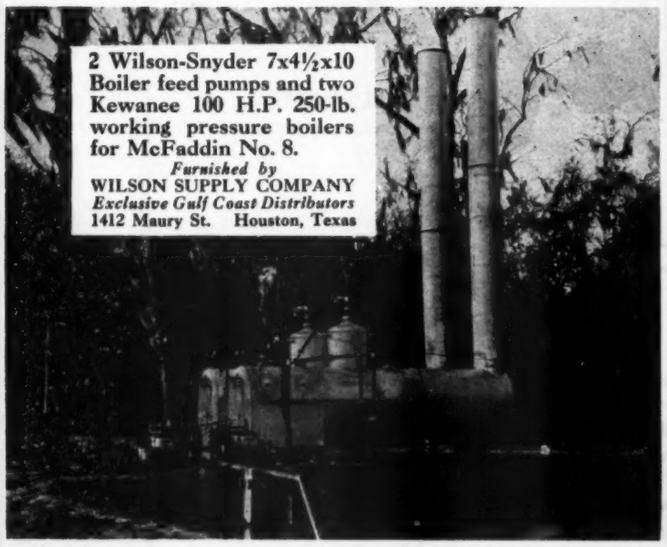
Screw Plunger Grease Cup

WILSON SUPPLY COMPANY

Reliable products used in conquering Treacherous Gas sand in McFaddin Field.



Two Wilson-Snyder No. 16 Slush Pumps used in drilling McFaddin No. 8.
Furnished by
WILSON SUPPLY COMPANY
Exclusive Gulf Coast Distributors
1412 Maury St. Houston, Texas



2 Wilson-Snyder 7x4½x10 Boiler feed pumps and two Kewanee 100 H.P. 250-lb. working pressure boilers for McFaddin No. 8.
Furnished by
WILSON SUPPLY COMPANY
Exclusive Gulf Coast Distributors
1412 Maury St. Houston, Texas

One inch "TRU-LAY" Preformed Drilling cable (1400') used on McFaddin No. 8.
Furnished by
WILSON SUPPLY COMPANY
Exclusive Gulf Coast Distributors
1412 Maury St. Houston, Texas

SAFETY

Where Safety is so Vital!

The cellar control hook-up shown here is on one of the most important drilling jobs in the world, described in detail in the accompanying article.

The best equipment available is being used, including the RECTOR SAFETY CASING HEAD (13⅜" to 10¾") shown at extreme bottom of the picture. This Head is the foundation of all equipment above the surface, having more than 12,000 pounds of surface equipment resting on it while drilling progresses, and is holding the casing strings *down* as well as *up* while drilling through hazardous gas sands.

All metal in this Head is hammer forged steel of the highest quality, carefully machined to detail.

Another Rector Head (10¾" to 8⅝") has been purchased for this well.

For full details write our Fort Worth, Texas, headquarters, or refer to pages 396-397 in your 1934 Composite Catalog.

RECTOR
WELL EQUIPMENT COMPANY
FORT WORTH Ph. 2-8750
HOUSTON Ph. C-0256
OKLAHOMA CITY Ph. 3-6464

. . . . *in the*

ROTARY

T-I-W
LINER TYPE
ROTARY SLIPS

When the drive bushing of the big Doheny-Stone Hydril rotary is removed, and pipe must be moved, Texas Iron Works Liner Type Rotary Slips handle the job. These are the T-I-W slips which handle any size drill pipe from 3" to 6", simply by changing the toothed liners. Full details will gladly be furnished to any operator on request.

TEXAS IRON WORKS
1401-1423 MAURY STREET
HOUSTON, • TEXAS

THEY CHOSE O-C-T FORGED STEEL TEES FOR SURE PROTECTION

Note the two 7" O-C-T High Pressure Forged Steel Tees in the circles. There are four more of them (obscured from view) in this cellar hook-up.

Read the accompanying article telling how previous drilling wells in this gas-tricky area were lost from cratering. It's one of the real test jobs of the world today . . . . . and O-C-T Forged Steel Fittings are standing the test.

Sold through leading supply stores.

OIL CENTER TOOL CO.
QUALITY O-C-T PRODUCTS
HOUSTON, TEXAS, U.S.A.

Drilling Methods Overcome Hazards of Heavily Gas-Charged Sands in McFaddin District

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Feb. 17.—That the hazards encountered by the Texas Co. in attempting to drill through the heavily gas-charged shallow sands in the McFaddin district of southwestern Victoria County, in the lower Gulf Coast, may have been overcome is indicated by the successful negotiations of those horizons by a test which that company now has under way. This test, No. 8 McFaddin, is down to a total depth of 3,609 feet, or around 400 feet below the sands which have given so much trouble in previous operations on the large McFaddin ranch block and prevented the exploration for oil in the lower horizons. Many deeper high pressure gas sands are to be expected but the penetration of the more dangerous shallow zone without mishap has demonstrated that these can be kept under control.

At this time, the making of additional hole is being delayed temporarily by a fishing job occasioned by stuck drill stem. This has not been the result of any difficulties with the gas sands and throughout the fishing operations so far no unusual obstacles have arisen.

In view of the rapid succession of bad blowouts, followed in nearly every instance by cratering and loss of wells, which have been occurring in various fields scattered all over the Gulf Coast due to the gas charged shallow sands, the accomplishment of the Texas Co. in apparently conquering such conditions in what has been considered one of the worst areas on the coast is of particular importance.

New Types of Equipment

In itself, the drilling of No. 8 McFaddin has been an interesting undertaking. It has introduced to the Gulf Coast certain types of equipment never used before in this district, and practices followed have presented innovations to methods formerly in vogue for combating high pressure sands and blowout conditions.

For those readers not familiar with conditions existing on the Gulf Coast it might be well to explain that development in this district is extremely susceptible to blowouts and wild wells. The upper formations generally are very soft, consisting largely of loose sands, sandy shales and shales. The fact that there is very little uniformity or regularity in the sands makes drilling all the more treacherous in areas of gas accumulation, and once a well starts to blow the soft and loose overlying formations offer little resistance to cratering.

The danger from blowouts perhaps is augmented in those fields in which there have been previous wild wells. Such wells may result in the charging of shallower sands, with high pressure gas from lower sands. The gas, migrating through the shallow, loose sands, may create treacherous conditions.

View of Hydril rotary, drawworks and three-cylinder vertical steam engine on The Texas Company's No. 8 McFaddin

The McFaddin district perhaps has presented blowout hazards of greater extent than anywhere else on the Gulf Coast. An unusual multiplicity of sands marks the area and from a depth of less than 400 feet down to below 3,100-3,200 feet there is a succession of sands and lenses constituting a zone of comparatively high gas pressures and puzzling conditions to handle.

For the entire past year the Texas Co. has had to direct its entire attention in the district towards efforts to kill and control two wells which blew out and cratered early in 1933. Both of these wells, Nos. 6 and 7 McFaddin, after so long a time now are believed to be about dead although one still is making a little gas.

First Test Since Blowouts

Except for two shallow relief wells, one each being put down by the sides of the two craters, the present test, No. 8 McFaddin, is the first started since the blowouts of Nos. 6 and 7. Of particular concern is the fact that its location is only 933 feet (one location) from No. 7, being west and a little north of the latter. The location of No. 6 McFaddin also is in the immediate vicinity being only approximately 1,000 feet north and a little east of No. 7, the three forming a triangle.

Of interest in the drilling of No. 8 McFaddin is the installation of Hydril drilling and pressure control equipment by Doheny Stone Drill Co. of Texas. This type of equipment, consisting of rotary and pressure head, drawworks and the characteristic three-cylinder vertical engine, has been successfully used in California for a number of years. Similar outfits are now in operation in Reagan County, Texas, in Burmah, at Attock and Masimpur, India, and on the island of Bahrein. It is known that on at least three different occasions, if it had not been for the control of this equipment, No. 8 McFaddin would have blown out like its predecessors.

The installation is designed to drill under pressure, and, by the maintenance of a constant and sufficient back pressure on the drilling fluid column, prevent the possibility of any gas breaking out of the formations drilled through. In this operation the Texas Co. has not constantly maintained a registerable pressure on the drilling column although it has followed the practice of restricting

Flow line control hook-up on McFaddin No. 8. Seven-inch lines leading from cellar control hook-up are reduced to 3" at the ditch. One flow line has full three-inch opening and the other has a ¾" chocker nipple installed. Assembly includes Merco-Nordstrom 7" high pressure plug valves, O-C-T flange unions, Thornhill-Craver Unibolt unions, and miscellaneous nipples and fittings

Cellar control hook-up on McFaddin No. 8 consists of a Rector 13⅜"x10¾" safety casing head; two 13⅜" 3000-pound test gate valves; a 13⅜" Hughes 3000-pound test cross with 7" flow line openings, two 7" Merco-Nordstrom 3000-pound test plug valves; six 7" forged steel Oil Center Tool Company tees. Bottom 13⅜" valve is open at all times, top valve being closed if it is desirable to make a test of pressure in the hole

the discharge of drilling fluid returns to such a point that there is complete control of the well at all times.

Restrictions of the drilling fluid returns, as practiced in the setup, is provided by the discharge of the fluid through two 3-inch lines, on one of which is a choke, at present three-quarters inch. Under usual procedure, this discharge would have been through 7-inch lines. It is possible, by closing the open 3-inch line and regulating the size of the choke in the other, to build up quickly, or maintain, any back pressure on the hole desired, or required, to meet emergencies. It is by this means that the equipment is able to keep the well and the gas in the formations constantly under control.

The two 3-inch lines are swedged down from the 7-inch lines from the Hughes Tool Co. 13⅜-inch Cross. For closing these lines, each is equipped with two 7-inch, 3,000-pound test Merco-Nordstrom plug valves, one valve on each being located close to the cross, and the other at the end of the flow line where it discharges into the ditch.

At the same time, the company has given considerable attention to the condition and weight of the drilling fluid. Mud admixtures have been run from the start, Colox having been used down to the setting of the first surface string, and Baroid from that point on. While the surface hole was being made and until the setting of the first surface pipe (13⅜-inch casing at 232 feet), a mud weight of 12½ to 13 pounds was maintained. A mud weight of between 11.5 and 11.8 pounds was carried until the setting of the second string of surface pipe (10¾-inch casing at 1,019 feet), and 12-pound mud since then.

Cellar Hookup

The cellar hookup has played important part in the control of the well while drilling through the dangerous shallow sands. At the bottom and installed on the 13⅜-inch surface casing is the 13⅜-inch to 10¾-inch Rector casinghead, above which is a 13⅜-inch, 3,000-pound test Hughes cross with the two 7-inch flow line openings. In making the connections from this cross there are six 7-inch forged steel Oil Center Tool Co. tees. Above the cross is a 13⅜-inch, 3,000-pound test Hughes flow valve and then a 13⅜-inch drilling nipple, on top of which is installed the regular Hydril pressure head with the upper and lower packer assembly permitting the drilling of the well under pressure.

Because of the Hydril assembly with its packer arrangement for pressure drilling, plain end, flush joint drill pipe is being used. This is 5-inch, 20.50-pound internal upset pipe furnished by the Spang-Chalfant Co. with Hydril external flush tool joint. Gearench Manufacturing Co. is building a pair of 5-inch O.D. friction type breakout tongs for use on the rig.

Drilling of the hole was started late in November and first carried to a depth of 232 feet where the first string of surface pipe was cemented, this work being done by Halliburton Oil Well Cementing Co., to case off the top surface formations and very shallow water sands. The hole then was taken to 1,019 feet, where the 10¾-inch casing was cemented as protection against the shallower gas sands. Although ordinarily on the Gulf Coast only two strings of pipe are needed, one surface string and a flow string, in blowout areas it is necessary to run two surface strings. Threaded and coupled Spang-Chalfant 2, 54.50-pound, 13⅜-inch O.D. conductor pipe was used for the first string while Hydril flush joint, Spang-Chalfant 44.21-pound pipe made up the second string. All casing has been run in on Baker cement float shoes.

From the surface on down to the present depth of 3,609 feet where the drill pipe stuck there was no trouble or delay in the drilling. Drilling was done throughout with Texas Iron Works' Christian fishtail bits, although Hughes 12¼-inch rock bits were used in reaming the hole in setting of the second surface pipe. Coring was done with Hughes 6¼-inch automatic core bits. Due to the need for as nearly perfect hole as possible, careful check was kept of drill pipe weight and hole straightness. In addition to the regular hydraulic gauge on Hydril unit to govern the lifting pressure for the rotary table, there is a Martin-Decker indicator supplied by Reed Roller Bit Co. to check the weight of the pipe at all times. Hole surveying has been done with Syfo Clinograph instruments by Sperry-Sun Oil Well Surveying Co.

To Resume Drilling Shortly

While the present fishing job has thrown operations off schedule it is expected that the hole will be cleaned successfully and drilling resumed shortly. The stuck drill pipe is being cut out with Baash-Ross cutting tools and fished with a Doheny-Stone releasing and circulating 5-inch overshot.

In the entire setup of the McFaddin operation every consideration has been given to provide facilities and equipment capable of combating the hazards which exist in the area and insuring a successful test to possible important oil production in deep sands underlying the shallow gas blowout sands. Concrete foundations and an Emsco steel substructure provide plenty of footing for the Parkersburg Rig & Reel Co. steel 122-foot derrick. Under the derrick is a concrete cellar 7 by 9 by

It's GIANT mates—
a pair of PETOL FRICTION
ROTARY TONGS
will soon hang in the derrick

This pair of 5" Regular Petol Friction Tongs on the drill stem platform of McFaddin No. 8, used in connection with the 5" O.D. Flush Joint drill stem, is the fore-runner of a large pair of Petol Friction Rotary Tongs now being built to hang in the derrick.

These tongs, having no bits or teeth, and relying entirely upon a patented friction hold for their grip, can not possibly mar, scar, swage or injure the drill pipe. This is particularly important when flush joint pipe is being run through stuffing boxes, pack-off devices or sealing heads, since it protects packing and sealing rings against damage which might cause serious trouble in the event a well tried to blowout.

Operators and contractors using flush joint drill pipe, or setting flush joint casing, of any size, are cordially invited to write us for full particulars of these new Petol Makeup and Breakout Friction Rotary Tongs. We will gladly forward our complete catalog.

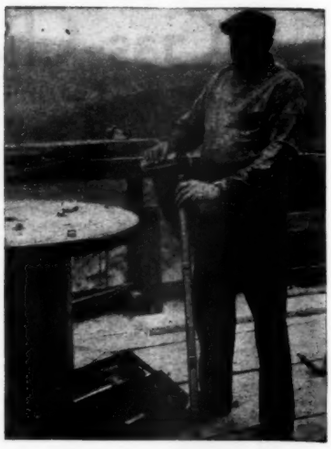
GEARENCH MFG. COMPANY
Main Office and Factory:
HOUSTON, TEXAS
"The most complete line of Tongs in the world"
Sold By Leading Supply Houses Everywhere

. . . . . *on the*
UNLOADING
RACK
and
IN THE HOLE
T-I-W-CHRISTIAN
FISH TAIL BITS

T-I-W Christian fishtail bits, which deliver circulation right at the cutting edges of the bit, are on the unloading rack—and in the hole—of McFaddin No. 8. They are also cutting fast, clean hole on dozens of other Gulf Coast rigs—at the least possible cost per foot of hole. Dependable field service at reasonable prices.

TEXAS IRON WORKS
1401-1423 MAURY STREET
HOUSTON, TEXAS

Out of sight...
out of LINE!



That's what happens when the course of a drill hole isn't checked scientifically. That's why what you can't see can hurt you when you attempt to substitute guesswork for the unfailing accuracy of SYFO.

Daily use of the SYFO Clinograph enables the driller to control direction . . . . and insures a deviation of less than 1° from the vertical in the entire operation.

Keep holes *straight* with Syfo . . . . and put more figures on the profit side of the ledger.

Write for descriptive literature and rates. Also makers of the Surwel Clinograph.

SPERRY-SUN WELL
SURVEYING CO.
1608 Walnut Street
PHILADELPHIA, PA.
DALLAS, TEXAS
1501 Munger Avenue
TULSA, OKLAHOMA
402 Petroleum Building
TYLER, TEXAS
Peoples National Bank Building
HOUSTON, TEXAS
819 Esperson Building
LOS ANGELES, CALIF.
415 Petroleum Securities Building
BRADFORD, PA.
Hooker Fulton Building

Sectional view of a SYFO Clinograph

SYFO
CLINOGRAPH

14 feet in size houses the well head assembly.

A 1,400-foot 1-inch Trulay drilling line supplied by Wilson Supply Co. is in service, this being strung through a Boykin five-sheave crown block and a Boykin four-sheave traveling block. This lifts an Ideal 6-inch, Type A, swivel and an 8-inch Ideal wiggle hook, both from the National Supply Co. Drill pipe has been handled by Doheny-Stone and Texas Iron Works slips while the casing was run in through Hinderliter Tool Co. bowl and slips. Other drilling equipment includes a 3-inch Champion steel rotary hose, Byron Jackson-Wilson type elevators, and tongs of the same make, and a Hill & Foster automatic cathead. An American Well & Prospecting Co. Gumbo Buster pump provides the lifting medium for the Hydril pressure rotary. The drawworks is equipped with Raybestos brake lining and Timken roller bearings.

Two No. 16 Wilson-Snyder slush pumps, equipped with Mission Manufacturing valves, handle the drilling mud. Power for all the operations is supplied by two 100 horsepower, 250-pound working pressure Kewanee boilers from Wilson Supply Co. The water for these is supplied by Wilson-Snyder boiler feed pumps, integrally mounted on a steel base with the two 3-KW Westinghouse horizontal steam turbine-driven generators, which furnish electricity needed around the operations. The latter mounting was done by the Maintenance Engineering Co. of Houston. The feed pumps are equipped with Hills-McCanna automatic lubricators and it might be mentioned that the drilling engine is lubricated by McCord automatic equipment. To insure an absolutely dry steam for the engines, a WKM steam separator is connected on the line.

Story of Development

Development of its McFaddin ranch block, which consists of more than 7,500 acres, was started by the Texas Co. in June, 1930. The first test, which evidently was off the structure, being 1¼ miles easterly from any of the nearest of the later tests. It was drilled without any trouble and went to a total depth of 6,684 feet where it was abandoned as a dry hole in December, 1930.

The second test, No. 2 McFaddin, 1¼ miles to the west of No. 1, and started in January, 1931, shortly after the abandonment of the first hole, got only to a depth of 2,025 feet, when, in February it blew out and ran wild making a large volume of gas. Drill stem remained in the hole, which did not crater, and the well was killed successfully and later completed as a gasser, producing through the drill pipe. The well still is on production, maintaining a pressure of around 750 pounds, and supplying fuel for other operations of the company as well as to lines of the United Gas System.

The third test, located 2,675 feet north and 30 degrees west of No. 2 McFaddin, was started in June, 1931, and getting through the shallow sands without trouble was drilled to a total depth of 5,835 feet, where in oil sand it was completed on January 1, 1932, as the discovery well, and so far the only oil producer in the area. Initially it flowed at the rate of 720 bbls. daily with a pressure of 1,250 pounds on the tubing and 1,075 pounds on the casing through a five-eighths inch choke. This production after several months declined to almost nothing and later that year the well was killed and the hole deepened to 7,000 feet and abandoned.

The first real trouble with the shallow gas sands began with the fourth test, started in February, 1932. This test, located 2,800 feet due north of No. 3 McFaddin, blew out while at a depth of 2,840 feet. After running wild for some time, the well bridged, killing the gas but blew out again on several occasions in attempts to sidetrack the old hole. Finally, after battling high gas pressures for several months and being unable to drill any deeper, the hole was junked and abandoned with drill stem stuck in it.

The fifth test then was located some 2,000 feet west and a little south of No. 4. It was spudded in November, 1932, and negotiated the shallow gas sands successfully without encountering any trouble but after going to a depth of 4,970 feet was abandoned as dry.

Swallowed the Derrick

Location was made immediately for No. 6 McFaddin, approximately 4,500 feet southwest of No. 2 McFaddin, the first blowout. The test, which was destined to cause so much trouble, drilled to 3,047 feet, or almost through the danger zone, when, in March, 1933, it got out of control. It soon cratered and swallowed the derrick, rig and other machinery. It ran wild for an even month and died only when it bridged itself. It later blew for short periods of time but at present is dead.

The seventh test, No. 7 McFaddin, the other crater gasser, was spudded in about the time No. 6 McFaddin blew out. It managed to get to a depth of only 1,176 feet when gas, presumably migrating through shallow sands from No. 6 McFaddin, broke out around the 13⅜-inch surface pipe, cemented at 1,161 feet, and cratered this hole also, with the loss of the derrick and all equipment.

(Continued on Page 33)

. . . . *on the*

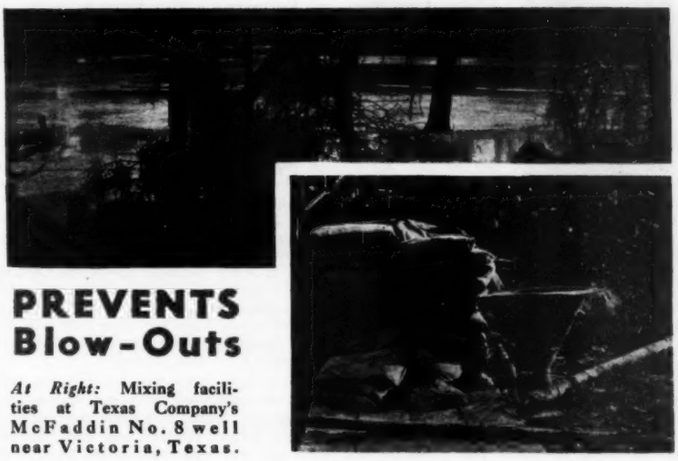
RAT HOLE

T-I-W-FRICTION TYPE ROTARY SLIPS

Over on the rat hole, where the round, flush-joint Kelly is stowed out of the way, a set of T-I-W Friction Type Rotary Slips, with special bowl, hold the Kelly exactly where it is wanted. These slips, with special spiders, are available for any size of drill pipe or tubing. Full details gladly furnished on request.

TEXAS IRON WORKS
1401-1423 MAURY STREET
HOUSTON, TEXAS

BAROID
Controls
High Pressures



PREVENTS Blow-Outs

At Right: Mixing facilities at Texas Company's McFaddin No. 8 well near Victoria, Texas.

Properly used, BAROID enables the operator to control practically any high gas or water pressure encountered in drilling

PUMPABLE muds weighing as much as 19 pounds per gallon have been prepared from BAROID and actually used to control pressures. Even heavier muds than this can be prepared if necessary.

Play safe in emergencies by using BAROID—the *proven* weighting material for rotary mud.

OTHER BAROID PRODUCTS

- AQUAGEL: Trouble-Proof Colloidal Drilling Mud.
- LEMCO MUD SCREEN: For Removing Cuttings and Abrasive Material from Drilling Mud.
- STABILITE: A Chemical Mud Thinner.

Stocks Carried
And Service Men Available In All Oil Fields

Send your name and address for our monthly publication "Drilling Mud." Each issue contains valuable mud data.

BAROID SALES CO.
LOS ANGELES • HOUSTON
National Pigments & Chemical Co., St. Louis

Vocational Training, Disposal of Salt Water, and Field Problems Discussed at A.P.I. Meeting

By L. G. E. BIGNELL
Petroleum Engineering Editor

If the spirit in evidence at the annual meeting of the Mid-Continent district of the Production Division of the American Petroleum Institute held in Oklahoma City, February 15-16, is a criterion, the petroleum industry is a long way back on its road to recovery. This meeting was attended by over 1,000 member of the A.P.I. and guests and every technical meeting room was crowded to overflow with interested audiences. The papers presented dealt with operating conditions in the Oklahoma City and East Texas Fields, salt water disposal in Kansas, vocational education, repressuring, taxation and the national petroleum code.

In the absence of Baird H. Markham, director of the American Petroleum Industries Committee of the American Petroleum Institute, who was to have addressed the meeting Friday afternoon on "Taxation — Responsibility or Menace," W. R. Boyd, executive vice president of the A.P.I., spoke before both the A.P.I. session and the noon-day meeting of the Oklahoma City Chamber of Commerce, the noon speech being broadcast.

These two addresses were in effect the joint opinions of General Markham and Mr. Boyd and traced the building up of taxes against the petroleum industry and then pointed out the functions of the American Petroleum Industries Committee and asked the co-operation of everyone interested in the petroleum industry, either directly or indirectly, with the regional and state groups in facing this situation and trying to find relief from the burdens of taxation now carried by the industry.

At the same session, J. D. Collett, general chairman, regional planning and coordination committee, Region No. 4, spoke on the "Petroleum Code," and reviewed the conditions leading up to its establishment and its functions. Mr. Collett handled his subject with great skill and understanding and an appreciative audience followed his remarks.

Before the election of the officers for the ensuing term the model of a section of a producing sand prepared by Humble Oil & Refining Co., Houston, Tex., was shown and proved of much interest, especially to the several hundred engineering students from Oklahoma University, Norman, Okla.; A. and M. College, Stillwater, Okla.; University of Tulsa, Tulsa, and other near-by colleges. These students were from the departments of petroleum and mechanical engineering and followed all papers presented before all sessions closely as a part of their school program.

Thursday Sessions

The meeting was called to order Thursday morning by R. R. Hawkins, chairman, the Texas Co., Tulsa, and following his opening remarks, H. L. McQuiston, Phillips Petroleum Co., Oklahoma City, presented O. M. Mosier, city manager, Oklahoma City, who departed from the customary address of welcome and turning over of the keys of the city, but made it clear that the guests were welcome and Oklahoma City citizens appreciated the honor shown their city by choosing it for this important gathering.

Reports of committees were made and approved and the first speaker for the day, L. K. Covell, state supervisor of vocational education, State Department of Education, Stillwater, Okla., gave his paper printed in The Oil and Gas Journal of February 15. This paper is worthy of careful reading and study by everyone interested in the real advancement of the men in the petroleum industry and if they will make it a point to contact the regional vocational directors and learn what is being done in their immediate vicinity, they can help forward this work. It is estimated that the new classes in vocational training now being formed in the various oil fields of Oklahoma will have over 1,000 students when they meet for the first lessons. As this work is being carried on in all other oil fields as well as in other industries it indicates a very definite movement under way to make use of the additional hours of leisure provided by the enactment of the National Recovery Code and will in time result in better equipped workmen everywhere in this country.

Every man who has been in the oil fields or connected with the production end of the industry knows the menace of salt water. Kansas has had trouble with salt water disposal in the past, and Earnest Boyce, professor of sanitary engineering, Kansas University, and chief engineer for the Board of Health, for the State of Kansas, Lawrence, Kans., very clearly outlined those problems and their probable solution in his paper, "Salt Water Disposal," presented at the Thursday morning meeting. It was published in last week's Oil and Gas Journal.

Technical Session

Starting at 2 o'clock Thursday afternoon the entire time until 5:30 o'clock was devoted to listening to three papers on Oklahoma City and East Texas production problems and discussing them. These papers were all published in The Oil and Gas Journal of February 15, and should be of much interest and value to anyone interested in the petroleum industry in any of its branches or in any field because the facts are in reality the consensus of opinions of the leading petroleum engineers and production men active in these two important areas.

H. F. Beardmore, petroleum engineer, Indian Territory Illuminating Oil Co., Oklahoma City, Okla., presented an abstract from the paper prepared by him and H. O. Harder, also with the Indian Territory Illuminating Oil Co., and collaborated in by many other engineers in the Oklahoma City Field. The paper was published in full in The Oil and Gas Journal of February 15. When it is remembered that these men have been handling production problems in this field every day since it was first opened and still are active in this work it will be realized that facts and not theories are presented.

It is emphasized that the natural flowing life of these wells is nearly at an end, but that there is a lot more oil to be recovered by mechanical production methods. However, which method will prove the most suitable for this deep field is still an open question and it may be that some inventor yet to be heard from holds the key to the situation. However, the average oil man does not look for miracles to happen so it is concluded that about 50 per cent of the wells will be beam pumped after the gas lift stage has passed; 25 per cent will be produced with long stroke units; and the remaining 10 per cent will be produced by small volume gas lift methods and miscellaneous devices.

This field presents a very encouraging prospect for the manufacturer of 15 per cent by electric motor driven centrifugal pumps of the submerged type and various modified forms of gas lift.

C. O. RISON

District Superintendent of Production, Indian Territory Illuminating Oil Co., Oklahoma City Field, Chairman Mid-Continent District, A.P.I. Division of Production

equipment for there are now 940 active wells in it and it is believed that practically all of them will have passed the natural flowing and gas lift stages before January 1, 1935. There are a number of details to be considered in producing these deep wells, with their paraffin, sand and gas in solution problems, but engineers have solved more difficult problems in the past and the Oklahoma City Field will undoubtedly produce for several years to come, but at a higher cost than when flowing naturally or gas lifted.

A companion paper to that presented by Mr. Beardmore was the one read by J. P. Stephens, district superintendent for the Phillips Petroleum Co., Oklahoma City Field, and prepared in collaboration with J. M. Hewgley, superintendent of oil production for the Slick estate, Oklahoma City Field. In this paper the reconditioning of wells in the Oklahoma City Field was discussed and after the paper was read Mr. Hewgley answered numerous questions put to him by the audience.

In answer to one question about cementing off bottom water, Mr. Hewgley stated that in killing the well with mud the circulation was lost and cotton seed hulls were dumped into the hole to try to plug up the leak in the formation, only to have these hulls show up in an offset well shortly afterwards. This underground movement suggests large cavities in the formation. That there are open connections between wells is very evident by the movement of the hulls but it seems probable that this material passed from one well to the other through relatively small holes that had been washed out of the sand making up the producing formation.

Considering conditions under which this Wilcox sand was laid down in its present position it is reasonable to assume that some portions of it are more tightly cemented than others. The portions only loosely held together afford an easy passage for oil to the bottom of the well and under the relatively high pressures that existed in this formation when the field was young it may be assumed that high velocity currents were set up in these loose sand streaks and the sand grains washed out.

This action left a hole and such holes have been definitely determined to exist by the examination of cement cores that have come out of wells after they have been repaired and then a portion of the cement had been drilled out only to have the well blow out additional cement which came to the surface in the form of 2-inch diameter and 12 to 14-inch long sticks. These sticks showed clearly that this cement had entered a hole in the formation and that this hole extended to the adjoining well is proven because red mud had been previously circulated in the well later cemented. Some of this red mud was produced with oil from an offset. The outside of the cement core recovered from the well after the cementing job was covered with some of this red clay which seems quite conclusive evidence that this hole served as a passageway between the bottom of these two holes.

These holes are not very numerous in the formations in the Oklahoma City Field, being more of a novelty than a common occurrence, but they are of interest and have also been known in other fields.

East Texas

No engineering meeting would be complete without a discussion of the problems of the East Texas Field. C. E. Reistle, Jr., chief engineer, East Texas Producers Association, Kilgore, Tex., was secured as the speaker for this meeting and the program committee and the audience are both to be congratulated upon this very wise selection.

Mr. Reistle, formerly with the U. S. Bureau of Mines, Bartlesville, Okla., has made a name for himself in his study of oil field engineering problems and his resume of the present conditions in the East Texas Field contained in this paper and published in The Oil and Gas Journal, February 15, is very complete, conservative and authoritative.

There is no dodging the fact that this field has a lot of oil still to be recovered and it is likewise very evident that there is a daily production rate at which the maximum amount of oil can be recovered. This rate is now placed at about 400,000 bbls. per day with a very slow drop in formation pressure.

If this daily rate is exceeded the energy within the formation will be dissipated more rapidly and used less efficiently. This will mean resorting to mechanical means of producing the oil at an earlier date than will occur if the recommendations of Mr. Reistle, and the committee of engineers he heads, are followed. At 400,000 bbls. daily production it is estimated that the present average bottom hole pressure of about 1,270 pounds will be maintained for several months. This means that it will not be necessary to resort to mechanical pumping methods to any great extent while this average bottom hole pressure

(Continued on Page 33)

The INDEPENDENT PETROLEUM ASSOCIATION of AMERICA

The Independent Petroleum Association of America was organized in June, 1929, at Colorado Springs, Colorado, and now is the largest independent association in the petroleum industry. The work of this association has resulted in the following achievements:

(1) An excise tax on imported crude oil and refined products. (2) Limitation of imports. (3) Gave leadership to the calling together of twenty-two independent associations in preparation for the Petroleum Code. (4) Development of the theory of stop-loss price determination. (5) Limitation of withdrawals from storage. (6) Support of the principle that supply must be kept within consumptive demand.

As its major objectives for 1934, the Association in its annual meeting included the following:

(1) A tariff for excise tax on foreign petroleum processed crude and its refined products. (2) Keeping the production of crude oil and its products limited to actual consumptive demand. (3) The elimination of Federal tax on gasoline and lubricating oils and the reduction of state gasoline taxes to reasonable limits. (4) Limitation of withdrawals from storage. (5) Limitation of imports. (6) Aid in enforcement of the provisions of the Code of Fair Competition for the Petroleum Industry.

A view of Boston Avenue, Tulsa. National Bank of Tulsa Building on the right.

WIRT FRANKLIN
President, Independent Petroleum Association of America

"PROSPERITY for the oil industry is assured when and only when production is held within the limits of consumptive demand with foreign oil kept from invading our markets to the ruin of any proper price-structure obtained through such limitation.

"Thinking in terms of dollars not merely barrels, in terms of a national industry not a local business only, in terms of years not days, in terms of orderly economic planning and not wasteful overproduction will make the petroleum industry a sound profitable business instead of a gamble with the cards too often stacked by the unscrupulous and the greedy."

—WIRT FRANKLIN.

Tulsa, the headquarters for leading associations within the petroleum industry, is also the home of the National Bank of Tulsa—which qualifies for its title as "The Oil Bank of America" by having a directorate experienced in every phase of oil activity and ample resources for oil financing.

The resources and the facilities of this bank are available to those who meet its reasonable requirements whether their business be large or small.

NATIONAL BANK OF TULSA
TULSA OKLA.

CAPITAL RESOURCES $8,000,000

*Preferred Capital	$4,000,000
Common Capital	2,000,000
Surplus	2,000,000

*Owned by Reconstruction Finance Corporation

Member Federal Reserve System

Major Laboratories Report on Reproducibility of Tentative Method of Antiknock Testing

By HARRY F. HUF

The laboratories co-operating in the tests were members of either the co-operative fuel research steering committee or its subcommittee on methods of measuring detonation, and included the following:

1. Atlantic Refining Co.
2. Bureau of Standards.
3. Continental Oil Co.
4. Empire Oil & Refining Co.
5. Ethyl Gasoline Corp.
6. General Motors Corp.
7. Phillips Petroleum Co.
8. Shell Petroleum Corp.
9. Sinclair Refining Co.
10. Socony-Vacuum Co.
11. Standard Oil Development Co.
12. Standard Oil Co. (California).
13. Standard Oil Co. (Indiana).
14. Sun Oil Co.
15. Texas Co.
16. Tide Water Oil Co.
17. Universal Oil Products Co.
18. Waukesha Motor Co.
19. Yale University.

Description of Samples

Ten samples were distributed by 10 of the co-operating laboratories.

Sample	Description
S-1	Blend of cracked and straightrun gasolines.
S-2	Cracked gasoline.
S-3	Natural gasoline.
S-4	Ethyl Gasoline.
S-5	Vapor phase cracked gasoline.
S-6	Blend of cracked and straightrun California gasolines.
S-7	Gasoline treated with tetraethyl lead.
S-8	Alcohol blended gasoline.
S-9	Straightrun gasoline.
S-10	Blend of cracked and straightrun gasolines.

Data

The samples were tested on July 5, 1933, by all laboratories, except where noted differently. Octane numbers as reported are shown in Table 1. The laboratories are not arranged in alphabetical order as above so that identity is concealed. In all cases except 13b and 13c, Standard Oil Development Co. reference fuels A2 and C6 were used, and octane numbers were obtained from calibration curves. While most laboratories used the calibration curve published by the Standard Oil Development Co., which was obtained co-operatively by a number of laboratories, a few used their own calibration curves. In these latter cases, the octane numbers as reported could include two experimental errors; one due to the testing of the sample in terms of reference fuels A2 and C6, the other due to the testing of A2 and C6 in terms of heptane and iso-octane. In order that all data will be comparable, Table 2 is included, in which all octane numbers were obtained by converting from ratings in terms of fuels A2 and C6 by the calibration curve adopted by the majority of the laboratories and shown as a solid heavy line in Figure 1. This figure also shows the calibration obtained by the five laboratories reporting such data, and it is significant that the spread in values is substantially two octane numbers.

All discussion of date is based on Table 2, and Table 3, which is obtained from Table 2.

Discussion

For the purpose of discussion two questions are asked, viz:

1. Is the existing equipment and method capable of giving satisfactory reproducibility when correctly adjusted and operated?

2. What are the principal causes of errors?

It is assumed that an average error not greater than 0.5 octane number, and a maximum error not over 1.0 octane number would be satisfactory reproducibility. Ten engines, marked with an asterisk in Table 3, gave results on all 10 samples substantially within these limits. In this group of 10 engines the average deviation from mean is 0.38 octane number; the greatest plus deviation is 1.0 octane number; and the greatest minus deviation is 1.1 octane number. The average octane numbers as determined on these 10 engines are in excellent agreement with the averages for the whole group, indicating that those showing greater errors were distributed on both the high and low sides.

This excellent agreement between 10 engines shows that when the equipment is properly adjusted and operated, the method is capable of giving satisfactory reproducibility.

Regarding the second question, there are several outstanding causes of errors.

1. Improper engine adjustment, including defective cylinders, spark adjustment, carbon deposits, bouncing-pin adjustments, valve action, erroneous intake temperature indications, etc.

Type of Error

These factors cause errors in which the algebraic average deviation from mean is appreciable, or, for discussion, over 0.5 octane number. This type of error occurs in 11 engines, six rating samples consistently lower than average, while five rate samples consistently higher than average. In this group of 11 engines the average deviation for mean is 0.96 octane number. As an example of the effect of engine condition, attention is called to engine 14d and 14e, the results being those obtained before and after cleaning carbon respectively. Carbon cleaning decreased the algebraic deviation from mean from —0.91 octane number to —0.26 octane number. The fact that the greatest errors occur with the fuels which are sensitive to engine adjustment lends support to the statement that consistent large errors are due to improper engine adjustment.

2. Improper technique, or careless operation, probably accounts for many of the errors found in the group of 12 remaining engines, which show no marked trend to rate samples either high or low, but where errors between 0.5 and 1.5 octane numbers are common. This group shows an average deviation from mean of 0.75 octane number. Improper carburetor adjustment probably is the cause of most of these inaccuracies, and it is recommended that curves of knockmeter readings versus carburetor setting be plotted for each fuel run, the final car-

(Continued on Page 43)

Progress in Perfecting Antiknock Test for Motor Fuel

The Co-operative Fuel Research Steering Committee at its meeting last November approved the preparation and presentation of a paper for Committee D 2 of Petroleum Products and Lubricants of the American Society for Testing Materials covering the results of a recent co-operative check of the reproducibility of the "Tentative Method of Test for Knock Characteristics of Motor Fuels" (A.S.T.M. Designation D357-33T). The accompanying was prepared by Mr. Huf and is now made available for study by the oil and automotive industries.

In Section 16 of the tentative method which was adopted March 7, 1933 this statement appears: "16. Results obtained by this procedure with different C.F.R. engines and in different laboratories should differ by not more than two octane numbers." However, experience in use of the method over a period of time indicated that errors or disagreements between laboratories sometimes exceeded two octane numbers. The work reported here was instigated (a) to gather data on the reproducibility of the method and (b) to determine by analysis of data the probable causes of errors in excess of stated limits.

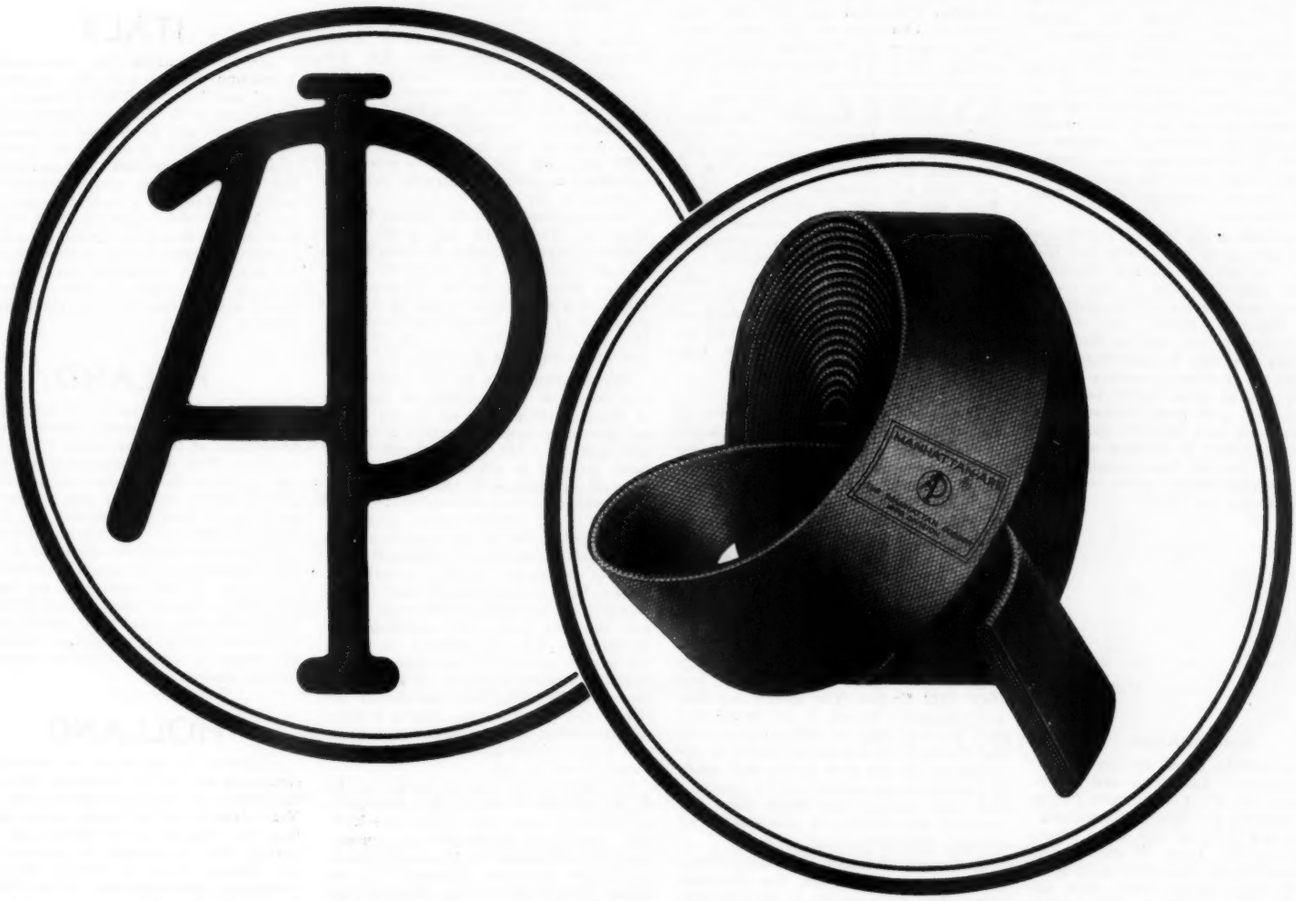
TABLE 1

Lab. No.	Remarks	Octane numbers S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	S-10
1		68.8	68.5	64.0	76.2	67.6	65.4	70.0	65.0	52.5	69.0
2		68.8	67.7	64.0	76.9	67.5	65.1	69.6	64.8	51.0	69.6
3		66.0	65.0	64.0	77.0	65.0	63.0	71.0	61.0	52.0	66.0
4a	Engine at high altitude	66.0	66.0	64.0	77.0	65.5	64.0	70.0	63.0	51.0	67.0
4b	Engine at low altitude	70.0	70.0	64.0	77.0	69.0	66.0	71.0	65.0	51.0	69.0
5		68.9	69.3	65.0	77.4	67.4	64.3	69.4	63.2	53.0	70.0
6		68.9	68.8	64.4	76.3	67.3	64.4	68.9	64.2	51.7	69.0
7		68.5	68.4	64.5	77.3	68.1	65.2	69.6	65.9	51.5	69.2
8a	Engine No. 21	67.6	68.5	64.8	77.5	64.6	64.8	70.0	64.0	50.5	69.2
8a	Engine No. 1	67.8	68.0	64.2	77.0	65.0	65.5	60.0	64.7	50.7	68.6
9		69.0	68.0	64.5	76.2	66.0	64.5	70.0	63.5	51.0	68.0
10a	Location A, Engine No. 1	68.4	67.9	61.0	76.3	67.4	62.7	70.0	64.3	51.1	68.4
10b	Location A, Engine No. 3	67.8	67.8	60.8	76.4	67.2	64.0	70.4	64.0	51.5	68.5
10c	Location B	68.4	68.6	64.7	76.4	68.0	64.7	70.3	64.3	52.5	68.6
11		69.9	69.8	63.0	77.5	68.0	65.1	69.5	65.7	51.0	68.7
12		67.1	69.6	65.2	75.7	65.4	63.8	68.8	64.8	51.7	68.5
13a	Engine A	68.8	69.0	63.5	76.5	67.0	65.0	69.5	64.0	49.5	69.0
13b	Engine B	70.0	70.0	64.5	76.5	68.0	66.0	71.0	65.0	51.5	70.5
13c	Engine C	68.5	70.5	65.0	76.0	67.5	65.0	69.0	65.0	52.0	69.5
14a	Location A, Engine No. 1	67.6	68.2	64.0	76.6	66.5	64.3	69.3	64.3	51.7	68.5
14b	Location A, Engine No. 2	68.5	68.5	63.8	76.6	67.0	64.0	69.0	64.3	52.2	68.5
14c	Location A, Engine No. 3	68.2	68.2	64.3	76.6	66.5	64.3	69.3	63.8	52.2	68.5
14d	Location B, before cleaning carbon	66.0	67.4	65.5	76.3	64.9	63.3	69.6	63.3	51.1	67.4
14e	Location B, after cleaning carbon	67.7	67.4	67.1	77.2	65.4	62.7	69.9	63.5	52.2	68.2
15a	Samples stored at room temperature	69.8	69.8	65.3	77.2	68.5	65.8	71.0	66.4	52.0	70.2
15b	Samples stored cold	71.0	71.0	65.8	77.2	69.5	66.0	71.5	67.0	52.6	70.0
16a	Engine No. 4	67.7	66.5	63.9	76.0	65.6	64.6	69.8	63.5	51.0	68.5
16b	Engine No. 2a	67.8	67.6	63.9	....	67.0	65.8	....	....	....	69.4
16c	Engine No. 2b	66.7	68.0	....	76.9	....	....	71.2	63.5	51.1	....
17a	Engine No. 1	67.3	66.6	64.4	76.6	66.1	64.9	70.1	63.2	52.5	67.4
17b	Engine No. 2	67.4	67.0	64.3	76.4	65.9	64.7	70.1	62.8	52.1	67.1
18		69.0	70.0	64.0	....	69.0	65.0	70.0	66.0	52.0	70.0
19a	Samples tested July 5	69.4	69.8	64.9	75.9	68.1	65.3	69.6	63.8	52.0	69.3
19b	Samples tested July 7	70.2	70.2	65.2	....	69.3	65.1	70.5	64.2	....	69.8
19c	Samples tested July 10	....	....	....	76.2	....	....	....	....	52.8	....
	Average of all values	68.3	68.5	64.3	76.7	67.0	64.7	70.0	64.3	51.6	68.8
	Maximum reported	71.0	71.0	67.1	77.5	69.5	66.0	71.5	67.0	53.0	70.5
	Minimum reported	66.0	65.0	60.8	75.7	64.6	62.7	68.8	61.0	49.5	66.0

TABLE 2

Lab. No.	Remarks	Octane numbers S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	S-10
1		68.8	68.5	64.0	76.2	67.6	65.4	70.0	65.0	52.5	69.0
3		66.0	65.0	64.0	77.0	65.0	63.0	71.0	61.0	52.0	66.0
3		68.0	65.0	64.0	77.0	65.0	63.0	71.0	61.0	52.0	66.0
4a	Engine at high altitude	66.0	66.0	64.0	77.0	65.5	64.0	70.0	63.0	51.0	67.0
4b	Engine at low altitude	70.0	70.0	64.0	77.0	69.0	66.0	71.0	65.0	51.0	69.0
5		68.9	69.1	65.0	77.4	67.4	64.3	69.4	63.2	53 0	70.0
6		68.9	68.8	64.4	76.3	67.3	64.4	68.9	64.2	51.7	69.0
7		68.5	68.4	64.5	77.3	68.1	65.2	69.6	65.9	51.5	69.2
8a	Engine No. 21	67.6	68.5	64.8	77.5	64.6	64.8	70.0	64.0	50.5	69.2
8b	Engine No. 1	67.8	68.0	64.2	77.0	65.0	65.5	70.0	64.7	50 7	68.6
9		69.0	68.0	64.5	76.2	66.0	64.5	70.0	63.5	51.0	68.0
10a	Location A, Engine No. 1	68.4	67.9	61.0	76.3	67.4	63.7	70.0	64.9	51.1	68.4
10b	Location A, Engine No. 3	67.8	67.8	60.8	76.4	67.2	64.0	70.4	64.0	51.5	68.5
10c	Location B	68.4	68.6	64.7	76.4	68.0	64.7	70.3	64.3	52.5	68.6
11		69.9	69.8	63.0	77.5	68.0	65.1	69.5	65.7	51.0	68.7
12		67.1	69.6	65.2	75.7	65.4	63.8	68.8	64.8	51.7	68.5
13a	Engine A	68.8	69.1	64.3	77.0	67.6	65.4	69.8	64.8	51.7	69.2
13b	Used own refinery fuels	....	....	....	....	....	....	....	....	....	....
13c	Used own refinery fuels	....	....	....	....	....	....	....	....	....	....
14a	Location A, Engine No. 1	67.6	68.2	64.0	76.6	66.5	64.3	69.3	64.3	51.7	68.5
14b	Location A, Engine No. 2	68.5	68.5	63.8	76.6	67.0	64.0	69.0	64.3	52.2	68.5
14c	Location A, Engine No. 3	68.2	68.2	64.3	76.6	66.5	64.3	69.3	63.8	52.2	68.5
14d	Location B, before cleaning carbon	66.0	67.4	65.5	76.3	64.9	63.3	69.6	63.3	51.1	67.4
14e	Location B, after cleaning carbon	67.7	67.4	67.1	77.2	65.4	62.7	69.9	63.5	52.2	68.2
15a	Samples stored at room temperature	68.6	68.6	64.2	76.9	67.2	64.6	69.9	65.2	51.6	69.0
15b	Samples stored cold	69.9	69.9	64.6	76.9	68.3	64.9	70.4	65.7	52.2	68.8
16a	Engine No. 4	68.8	67.7	65.0	76.5	66.8	65.8	70.9	64.6	52.2	69.7
16b	Engine No. 2a	68.5	68.3	63.9	....	67.8	66.6	....	....	....	70.0
16c	Engine No. 2b	67.5	68.7	....	76.5	....	....	71.3	64.6	52.4	....
17a	Engine No. 1	67.2	66.5	64.2	....	66.0	64.8	70.2	63.0	52.0	67.4
17b	Engine No. 2	67.7	67.2	64.5	....	66.1	65.0	70.4	63.0	52.0	67.4
18		69.0	70.0	64.0	....	69.0	65.0	70.0	66.0	52.0	70.0
19a	Samples tested July 5	69.4	69.8	64.9	75.9	68.1	65.3	69.6	63.8	52.0	69.3
19b	Samples tested July 7	70.2	70.2	65.2	....	69.3	65.1	70.5	64.2	....	69.8
19c	Samples tested July 10	....	....	....	76.2	....	....	....	....	52.8	....
	Average of all values	68.3	68.4	64.2	76.7	67.0	64.7	70.0	64.2	51.7	68.7
	Maximum reported	70.2	70.2	67.1	77.5	69.3	66.6	71.8	66.0	53.0	70.0
	Minimum reported	66.0	65.0	60.8	75.7	64.6	62.7	68.8	61.0	50.5	66.0

MANHATTAN BELTING



Manhattan Belting is manufactured in strict accord with A. P. I. Specifications and in addition possesses outstanding features that particularly adapt it to the severe field conditions of the oil industry. Manhattan Compensated Belts in sizes from 2-inch, 3-ply to 14-inch, 7-ply and lengths up to full rolls are stocked at all National Stores.

Bulletin No. 134-A free on request

THE NATIONAL SUPPLY COMPANY

NEWS FROM FOREIGN LANDS

MEXICO

Drilling operations in Mexico are expanding, according to reports from the producing and wildcat sections of that country. This increase was under way in 1933 resulting in the drilling of 93 wells in 1933 which compares with 50 in 1932. A total of 53 wells were completed in 1933 having a daily initial capacity of 7,473 cubic meters (47,006 bbls.) against 31 in 1932 with a daily production of 3,398 cubic meters (21,373 bbls.).

In the northeastern part of Mexico the success of tests already drilled has greatly stimulated interest and confidence is expressed that section of the country will become an important producer of crude oil. In consequence other projects have been added for 1934 in the northeast sections of Coahuila, Nuevo Leon and Tamaulipas.

At the basin of the Panuco and Tamesi Rivers, drilling of new wells has been planned, particularly in the Cacalilao, Chapacao and Corcovada Fields. Important tests are certain in Tuxpam and North Papantla Fields and various points of the Isthmus, such as Rofriguez Clara near the Vera Cruz-Isthmus Railroad. In the northeast section of the Isthmus, wildcat tests are to be drilled including deep sand tests. Operations already outlined will soon be started in the western section of Tabasco which up to this time has not been exploited.

The following report covers completed wells in Mexico for 1933:

	No. of wells	Daily output (bbls.)	Daily average output (bbls.)
Camargo (Tamps)..	1	gas	
Cacalilao (Panuco)..	3	1,302	434
Panuco (Diveraca)..	14	16,121	1,151
Comales (Tantoyuca)	2	629	315
Poza Rica	2	3,680	1,843
Tonald (Istmo)	4	3,497	874
El Burro (Istmo) ..	15	9,341	623
El Plan (Istmo) ...	12	12,436	1,038
Total	53	47,006	*887

*Average.

Field Activities

Recent reports show activity in the following areas: Lampazos and northwestern China; northeastern Nuevo Leon; Guerrero del Norte, Tamaulipas; Altamira del Sur, of the same state; Chapacao on the basin of the Panuco and Tamesi Rivers; Santiago de la Pena in the Tuxpam region; Poza Rica del Sur on the Tuxpam River; Sabinas del Norte, Coahuila; General Bravo in northern Nuevo Leon; Lampazos in northeastern Nuevo Leon; Camargo and Reynosa, north of Tamaulipas; Mier, northeastern Tamaulipas; Corcovado, Chapacao, Cacalilao and Topila, on the basin of the Panuco and Tamesi Rivers; Comales, southwestern section of Ozuluama; Llano de Bustos, western Tamiahua; Tanguijo, on the Laguna de Tamiahua; at Mecatepec and Poza Rica del Sur, on the Tuxpam River; Tonala, El Burro, El Plan, Pajaritos and Rodriguez Clara, on the Isthmus of Tehuantepec and Huimanguillo, state of Tabasco.

Various drilling operations have been planned of which the following are the most important: Two by the Ohio Mexico Oil Corp. at Salinas del Norte, in Coahuila; one by the Fidel Martinez Co. at Aldamas, northeast of Nuevo Leon; four by the Consolidated Oil Companies of Mexico, S. A., of great depth, at Zacate and Carlos Cantu in northeastern Nuevo Leon; one by the Ohio Mexico Oil Corp. at Rancherias and Camargo in northern Tamaulipas; two by the Fidel Martinez Co. at Mier, northeastern Tamaulipas; one by the Cia. Carbonifera de Ciudad Mier, at Mier, northern Tamaulipas; one by the Cia. Titania y El Charro (Standard interests) in the Reynosa region, north of Tamaulipas; one by the Control de Administracion del Petroleo Nacional (National Petroleum Control Administration) on the Laguna de Olas, southeastern Cacalilao (basin of Panuco and Tamesi Rivers). The Compania Mexicana de Oleoductos Imperio will drill at Cacalilao on the basin of the Panuco and Tamesi Rivers; the Mexican Petroleum Co. will drill other wells at Chapacao on the same basin. The International Petroleum Co. at Corcovado will drill in the same basin. The Sabalo Transportation Co. will drill five wells as follows: At San Jeronimo, on the shores of the Laguna de Tamiahua; at Toteco and Cerro Jiejo, on the Faja de Oro in the Tuxpam district. The Cia. Mexicana de Petroles "El Aguila" S. A. will drill a number of wells at Cerro Viejo and Zacamixtle, also on the Faja de Oro. Other important drilling operations will be simultaneously undertaken along the Isthmus of Tehuantepec.

The Hamilton & Devine Co., a subsidiary of the Mexican Gulf Co., will carry out topographical and geological research, to be followed by sounding explorations at Tamazunchale, San Luis Potosi.

Wells Drilling

At the end of December there were 29 wells being drilled in Mexican oil fields. In 1933, 171 permits were issued for drilling new wells, against 144 permits issued in 1932. Of the permits granted in 1933, 18 were issued in January, 24 in February, 12 in March, 15 in April, 7 in May, 16 in June, 18 in July, 18 in August, 4 in September, 10 in October, 20 in November, and 8 in December.

Exports

Total petroleum products exported by Mexico in 1933 reached 3,500,886 cubic meters (22,020,573 bbls.) which was only 90,233 cubic meters (567,564 bbls.) less than 1932 figures. The reason for this, as is generally known, is due to the fact that the first part of 1932, exports into the United States were increased in anticipation of the new tariff that made it prohibitive to export refined products into that country and which since has hindered importation of crude oils and refinery products.

Quotations on heavy crude oil in Tampico, not including taxes, has increased lately. The price quoted in January last year on cubic meter was $9.37 Mexican currency (45 cents per barrel). In October of the same year the price was $10.38 Mexican currency per cubic meter (46.6 cents per barrel) and in December the price had risen to $15.62 Mexican currency per cubic meter (69 cents per barrel) with higher tendency.

Light crude oil, f.o.b. Tampico, taxes excluded, has not fluctuated, the difference in price having occurred on account of the fluctuations of the dollar in relation to Mexican currency. Quotations in Mexican pesos have varied between 19.36 and 21.11 per cubic meter (93 cents per barrel).

Oil companies in the United States are among the foreign concerns operating in Mexico which are protesting against a new land tax which became effective January 1, 1934. The new decree placed a 20-centavos per hectare (approximately 4 cents per acre) surface tax upon all oil lands which have been granted or may be granted as oil concessions. It is estimated that this additional tax will cost the oil companies 1,000,000 pesos (approximately $500,000) per year.

The petroleum companies maintain that the new taxation is contrary to the agreement which they made with the president of the republic at the time the oil loan was made to the federal government in 1932.

U. S. S. R.

Official protection in commercial relations between the United Kingdom and Russia is to be re-established immediately through a new Anglo-Soviet treaty which was signed last week by representatives of the British Board of Trade and the Soviet government. The new agreement is expected to further trading in petroleum products between the two countries. The United Kingdom has been a large buyer of Russian petroleum products although this trade dropped off in 1933 and 1932 due in part to misunderstandings regarding commercial relations applying to all trade.

The organization of the Export-Import Bank at Washington last week is expected to expedite trading between Russia and oil equipment manufacturers in the United States. While the operations of the bank are to include trading with all countries it is officially explained that the immediate objective is the stimulation of trading with Russia.

Representatives of the oil administration board of the U.S.S.R. at the time of Russian recognition by United States in November indicated their desire to purchase oil field and refinery equipment in order to aid in expanding Russian oil operations in 1934 and following years. Representatives of the technical division of oil administration have been in the United States for several months making investigations to determine the type of equipment needed. Actual purchases have been delayed due to the necessity of arranging satisfactory credit and the new bank was established at Washington for the purpose of aiding the buyers and sellers in arranging satisfactory trading terms. It is understood that a trade delegation will shortly arrive in this country from Russia to carry on negotiations with manufacturers which will include other lines of industrial activity as well as oil.

The bank is to have an initial capital of $11,000,000 of which $10,000,000 is in preferred shares and held by the RFC. The remaining $1,000,000 of common stock is purchased by President Roosevelt under authority conferred by the NRA. The President has directed that the stock be voted by such people as the secretaries of state and commerce shall appoint for the purpose. Directors qualifying shares numbering five for each director are to be held by Secretary Roper of the Commerce Department; Robert F. Kelly, State Department; Chester C. Davis, AAA administrator; Stanley Reed, general counsel of the RFC, and Lynn P. Talley, executive assistant to the directors of the RFC. The new bank is authorized to conduct a general banking business except that of discount or circulation.

It is expected that George N. Peek, special adviser to the President, will be appointed head of the bank within a few days and the bank will then start functioning.

A marked increase in crude oil production and refining activities in Russia is shown in the summary report of operations for January. The report shows that the crude oil production totaled 1,908,000 tons (approximately 13,656,000 bbls. or 440,000 bbls. daily). The drilling totaled 96,064 meters and the crude oil runs to stills at refineries for the month was 1,668,700 tons (11,680,900 bbls. or 377,000 bbls. daily).

These figures compare with a total crude oil production of 1,798,000 tons (approximately 400,000 bbls. daily) in December, 1933. Drilling operations totaled 1,421,700 tons for the month (approximately 321,000 bbls. daily). The January operations also represent a substantial increase over January, 1933. The government program in Russia calls for a steady increase in all phases of oil operations during 1934.

ITALY

Drastic alterations are introduced in legislation dealing with the importation of oil into Italy. All future imports will be subject to Government license. A special license will be granted to importers giving the right to supply oil direct to the consumers provided the quantity does not exceed 300 tons monthly. Other importers will require a general license valid for 20 years for importing crude oil and a three-year license for importing refined products. License holders will be required to maintain a minimum stock, to give priority to supplies to public services, and to execute agreements in the national interest.

POLAND

The recent congress of the Association of Polish Oil Producers passed several resolutions at the termination of the proceedings. The most important of these was an invitation to the government to provide funds and carry out prospecting work in the hope of extending the Borysław oil fields so that the production of domestic crude could be increased. It was also agreed that the country needed the investment of new capital in the industry, and recommend that refined products from indigenous crude oil should enjoy preferential fiscal treatment so as to enable them to compete with the imported foreign products.

HOLLAND

A decision of importance to several oil companies due to the changing values of currencies was rendered last week by the Netherlands Court of Justice which ruled that the coupons of the Bataafsche Petroleum Co. are payable in current dollars instead of gold in view of the new regulations governing gold in the United States. At the same time, however, the Royal-Dutch company was ordered to pay interest and redemption amount on its 4 per cent $40,000,000 loan of 1930 in gold. The decision in both cases can be appealed to higher courts.

PORTO RICO

Distributing companies in Porto Rico last week accepted the recommendation of a report submitted to Gov. Blanton Winship by a committee of four accountants which found that 23½ cents per gallon was a fair retail price for gasoline at this time. The four distributing companies immediately accepted the report pending investigations which may result in further changes. The approved price includes a 7-cent gasoline tax. The new price was not acceptable to some users who started another boycott the day the new price became effective.

The action of the government follows charges that oil companies were charging the car owners of Porto Rico too much for their gasoline. A boycott against the companies charging 25 cents per gallon was started in December following which a 20-cent price was established pending an inquiry.

Straight Run

No wonder they formed a pool to buy up straight-run gasoline—motorists don't want it

If all straight-run were cracked by reforming, there would be no need for a buying pool

Straight-run gasoline is distress gasoline It distresses the engine because it knocks—it distresses the refiner because it is hard to sell

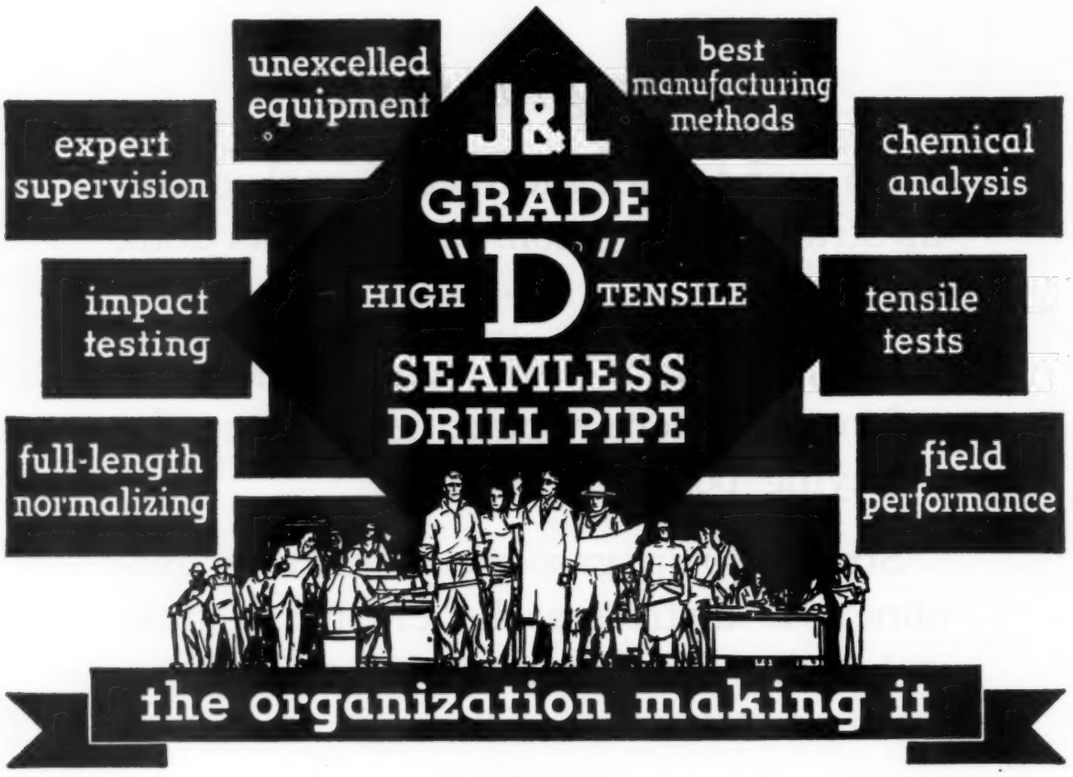
Dubbs refiners will have no cracked gasoline to sell to a pool All Dubbs cracked gasoline goes where it will do the most good—in the automobile engine

And there is never enough to go round

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

HERE'S WHY IT'S EXCEPTIONALLY GOOD DRILL PIPE



The performance which J & L Grade "D" High Tensile Interior Upset A.P.I. Seamless Drill Pipe has given, even under the most difficult conditions, is the result of manufacturing which is completely controlled and scientifically directed by Jones & Laughlin. ¶ Starting with the mining of ore and progressing through steel making, pipe making, testing and inspecting, every operation is performed by J & L men under J & L direction. There is no division of responsibility, no elements of uncertainty to affect the uniform excellence of the product. ¶ That is *why* J & L Grade "D" Drill Pipe is exceptionally good. Just *how* good it is, how it meets the exacting requirements of high-speed, deep-hole drilling, can be fully realized only after using it.

CASING DRILL PIPE · TUBING LINE PIPE · J&L PIPE · SEAMLESS · WELDED

J&L STEEL

JONES & LAUGHLIN STEEL CORPORATION

Late Fields

OKLAHOMA

The Springrose Drilling Co.'s test in Section 19-11-1e, Oklahoma County, was cleaned out of about 70 feet of cavings and 5-inch perforated liner run. This well was good for from 150 to 250 bbls. as it stood, but reports from the field indicated that it will be given an acid treatment. The leasing play around the well has been tremendously active. Ramsey Petroleum Co. was the largest recent buyer, having acquired about 1,000 acres as close to the well as possible.

The Twin State Oil Co. and others' test (Huckleberry and others) in Section 25-12-3, Lincoln County, was opened up Tuesday and flowed 70 bbls. in 40 minutes and then quit. It will be given a swabbing test. The oil is 33 degrees in gravity (corrected).

KANSAS

Tom Palmer and others' wildcat test just outside the town of Russell, in Russell County, Kansas, produced 770 bbls. in an 18-hour test. It is producing from Siliceous lime at 2,783-86 feet.

Ruling on Gasoline and Unfinished Oil Stocks

WASHINGTON, D. C., Feb. 19. — A number of refiners throughout the country have been running more crude to stills than their gasoline needs required because they felt if they stored the excess crude it would be "frozen" under regulations which forbid withdrawals from storage except upon permission of the Planning and Co-ordination Committee. As a result stocks of gasoline and unfinished oils, which can be made into finished motor fuel quickly, have piled up and refined oil quotas have been exceeded. To correct this situation, the Planning and Co-ordination Committee today passed and approved the following order:

Resolved that for the reckoning period beginning January 1 and for subsequent reckoning periods, where operators make net additions to their crude oil stocks in storage during such reckoning period, the net quantities so added shall be deemed free and subject to withdrawal from storage in future reckoning periods without further authorization, and the same shall not be taken into account in determining net withdrawals from storage in such future reckoning periods; provided, however, that this resolution and order shall not be construed so that stored oil purchased and taken from the seller's storage into the buyer's storage shall be excluded in computing net additions to storage, except with the approval of the Planning and Co-ordination Committee and provided further that each net addition to storage hereunder as well as each net withdrawal from storage, during any reckoning period, shall be reported to the Planning and Co-ordination Committee within 20 days after the expiration of the reckoning period.

NEW GAS LINE IN MICHIGAN

MUSKEGON, Mich., Feb. 20.—The American-Michigan Pipe Line Co. was given a permit today by the Michigan Public Utilities Commission to lay a 55-mile natural gas pipe line between the Austin Township, Mecosta County gas field and Muskegon.

March 1 the work of the line will be started, according to E. H. Kifer, vice president and general manager of the new Muskegon subsidiary of the American Light & Traction Co. Edward Fischer, United Light & Power Co. engineer, will be in charge of construction.

MAGNETIC STORM

The Tucson, Ariz., station of the U. S. Coast and Geodetic Survey reports that a moderate magnetic storm began at 2 a.m. (C.S.T.) February 16 and lasted until 8 a.m. on the 19th. Its telegrams follow:

"Storm began sixteenth. Eight. Moderate."

"Storm ended nineteenth. Fourteen."

This is the first magnetic storm reported since September 14, 1933.

National Conference on N.R.A. Codes Opens at Washington, February 27

BY ANDREW M. ROWLEY

WASHINGTON, D. C., Feb. 19.—The administration and policies of the NRA and the workings of the different codes of fair competition in different branches of business, including the petroleum industry, will be discussed here at a series of conferences which will open in the auditorium of the Commerce Building on February 27 at 10 a.m. The sessions scheduled to start then are for the public and any person interested in any phase of the administration of the NRA or policies of that organization may attend those sessions and present his views on the subject.

Specific codes will not be discussed at these meetings for the public, although suggestions may be offered at these sessions for consideration later by representatives of the code authorities. The general working of the NRA, the public's attitude towards it, and such matters as may deal with the administration or policies of the NRA will be open for free discussion by any person desiring to attend these sessions.

Beginning on March 5 in Constitution Hall and extending through March 8 representatives of the code authorities and the trade association code committees, including the Planning and Co-ordination Committee and Petroleum Administrative Board for the petroleum industry will hold group sessions to consider different subjects outlined by Gen. Hugh S. Johnson, administrator of the National Recovery Administration. These will include the consideration in public sessions of the possibilities of increasing employment; protection against destructive competition and against excessive prices and monopolistic tendencies; the elimination of inequalities and inconsistencies in codes; the position of small enterprises; and the vast problem of code administration and the organization of industry for self-government.

Address by President

The tentative program for the conference provides for an address by the President and by General Johnson on the morning of March 5. In the afternoon of that day and on March 6 public meetings by groups will be held for presentation and consideration of the subjects outlined above. On March 7 the representatives of the code authorities and code committees will meet for consideration with the NRA of policies and actions on the subjects mentioned. March 8 will be devoted to a general conference of selected delegates of each code authority or trade association code committee with the administrator for consideration of policies and program of code authorities and NRA with reference to matters developed in public meetings and group conferences.

The petroleum industry is in a somewhat different position in regard to these conferences than other industries in that it is the only industry having an administrator of its own who is a member of the President's cabinet and who has charge of the operation of the code. Code authorities were set up for other industries but they usually are the boards of directors of the principal trade associations of the industries which were empowered by the administrator of the NRA to administer the code.

In setting up the code for the petroleum industry, difficulty was found in selecting a group of directors of an already established association to act as a code authority, hence the reason for the President's appointing the Planning and Co-ordination Committee and selecting Harold L. Ickes as oil administrator and the establishment of the Petroleum Administrative Board to advise with the oil administrator. No other industry has such a setup.

Oil to Be Represented

Notwithstanding the fact the petroleum industry is not regarded as coming under the jurisdiction of General Johnson's administration, an invitation was extended to the Planning and Co-ordination Committee to send representatives to the conference and that committee plans to name those of its members who will be in Washington at that time as official representatives.

It is expected data will be prepared by the oil industry representatives showing the large increase in employment in the oil business under operation of the code and facts on prices will be compiled for presentation should any reference be made to the effect of operation of the code on the consumer of petroleum products.

Marketing Code Held Not to Apply Within a State

DALLAS, Tex., Feb. 17.—Federal Judge William H. Atwell today held unconstitutional the marketing provisions of the oil code, ruling that the code provisions could not be sustained under the right of the Federal Government to regulate interstate commerce, as the defendant was engaged in purely intrastate business. He said:

"Local business, business confined exclusively to a state, business which does not impinge upon or affect or disturb interstate commerce is wholly beyond the fingers of the National Government. Such business is amenable to the local government.

"It seems to me that the recent Minnesota moratorium decision by the Supreme Court has no direct bearing upon the National Recovery Act. Emergencies that may be involved or recognized by a state may be sustained under the general police power inherent in such states. But Congress has no general police power. It must bring its enactments within one of the specifications or implications granted by the National Constitution, otherwise there is a lack of constitutionality."

An immediate appeal is to be made to the U. S. Supreme Court in the cases of the petroleum retailers charged with violation of the labor provisions of the code.

A.P.I. Committee Named on Drilling Practices

A. C. Rubel, Union Oil Co. of California, Los Angeles, is national chairman, and John F. Dodge of the University of Southern California is national secretary of the 1934 Topical Committee on Drilling Practice of the American Petroleum Institute's Central Committee on Drilling and Production Practice. Personnel of the committee by districts has been announced by Charles F. Roeser, chairman of the General Committee of the Division of Production. Membership on the central committee and the topical committee on production practice had been appointed previously.

The district committeemen follow:

California District: Bruce Barkis, chairman; C. J. Coberly, R. D. Copley, J. R. Gignoux, H. A. Gedde, F. W. Hertel, W. F. Huff, C. W. Inman, F. W. Lake, H. N. Marsh, M. N. Phillips, F. J. Shaver, B. K. Stroud, D. K. Weaver, W. C. Whaley, and N. W. Wickersham.

Eastern District: J. G. Montgomery, Jr., chairman; Jack Gaddess, H. H. Phillips, J. H. Newlon, J. French Robinson, C. B. Turner, and J. E. Wilson.

Mid-Continent District: H. T. Hayward, chairman; C. D. Miller, C. P. Parsons, H. H. Power, A. S. Richie, and D. L. Trax.

Rocky Mountain District: W. B. Emery, chairman; J. O. Dart, and William H. Strang.

Southwestern District: W. T. Doherty, chairman; L. B. Holland, H. B. Hurley, Blaine Johnston, L. K. Laney, R. D. Risser, Melbert Schwartz, W. C. Thomas, C. E. Sutton, A. W. Thompson, J. E. Warren, and A. H. Weyland.

Signatures Are Received on the Two Agreements

(Continued from Page 8)

this week on the possibility of the petroleum administration establishing minimum prices, or cost recovery prices, along the line of the schedule announced early last fall by Secretary Ickes. Several factors probably contributed to this discussion—the weakness in the refined oil market, the decision in the Texas cases, and the slowness in which signatures to the marketing agreement are being received.

Hot oil production and gasoline manufactured from this hot oil and distributed over a fairly large section of the Mid-Continent area is given as the primary cause of the weak refined oil market.

Administration Determined

It is realized here thoroughly in all quarters — the petroleum administration and the Planning and Co-ordination Committee — hot oil production must be stopped and stopped quickly before any real stabilization can be effected and that crude oil production and gasoline manufacture must be held to consumer requirements. Withdrawals of crude from storage are being watched closely also, as all three factors enter into the picture and are inter-related. Consequently, the industry should prepare itself for definite action on the part of the administration to achieve the desired results.

Whatever is necessary to accomplish this purpose of holding production of both crude oil and gasoline to consumer requirements will be done. It might be necessary to ask Congress for additional legislation and if such action is deemed necessary there will not be any delay in pressing the matter. If it is felt the problem might be solved by restricting interstate commerce shipments from states producing more than the quotas allocated to them, it is believed such orders and regulations will be issued.

The whole situation in a nutshell is this: While efforts to stabilize conditions have received a temporary setback as a result of recent court decisions, new plans are being formulated and launched with intensified vigor and the producer of hot oil just has a brief breathing spell. He might as well quit the business and join the parade because every power of the Federal administration will be used to stop that practice and bring production into line with consumer demand. If present laws are not adequate, others will be sought. And drastic measures, legal and lawful under present statutes and court decisions, can be invoked at any time the situation warrants.

As to the agreements and contracts, it is as an oil man remarked here this week: "The real test and measure of success is the ability to join with and work for the second best choice." The first choice, naturally, is the individual's own idea. As this man said, no one, probably, is entirely in favor of every feature of the agreements and the contracts but each should be willing to go along with the opinion of the great majority and take his chances of making a reasonable profit on operations along with this majority. Features might be objectionable to one operator but if 85 per cent of the industry would go along on the one proposition, no one, certainly, could be hurt badly. As it is now, no one is getting anywhere.

FAIR COST OF DRILLING

A hearing will be held in the assembly room of the Mid-Continent Oil and Gas Association in Tulsa on Wednesday, February 28, to consider the fair economic cost of drilling in the Crescent, Perry, Chandler, Oklahoma City, Seminole and southern Oklahoma oil fields.

THE OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published Weekly by

THE PETROLEUM PUBLISHING COMPANY

114-16 West Second Street, Tulsa, Oklahoma

P. C. LAUINGER, President
JOHN M. EGAN, General Manager
JAMES McINTYRE, Editor
ANDREW M. ROWLEY, Managing Editor
W. T. ANDERSON, Associate Editor
C. O. WILLSON, Refinery Editor

Established 1910 by PATRICK C. BOYLE

E. KLAPPENBACH, Advertising Manager
L. G. E. BIGNELL, Petroleum Engr. Editor
C. K. FRANCIS, Ph. D., Technical Editor
W. T. ZIEGENHAIN, Associate Editor
THOMAS F. SMILEY, Associate Editor
M. F. BALDWIN, Circulation Manager

Branch Editorial Offices

CANADA, Victor Lauriston HOUSTON, Neil Williams SAN ANTONIO, B. D. Stevenson
CHICAGO, Robert C. Conine LOS ANGELES, L. P. Stockman SHREVEPORT, J. R. Crumpton
DENVER, Tolbert R. Ingram NEW YORK, C. O. Willson TOLEDO, George A. Whitney
FT. WORTH, L. E. Bredberg OIL CITY, Robert C. Conine WASHINGTON, C. E. Kern

Branch Advertising Offices

NEW YORK CITY, C. L. Cain CHICAGO, C. R. Farmer CLEVELAND, Howard Markt
HOUSTON, Paul T. Putnam LOS ANGELES, J. H. Tinkham

(For representatives' complete addresses, see contents page)

Member, Audit Bureau of Circulations

A Drastic Bill

The oil business, intent on its own troubles, overlooks one important point. The whole recovery program of the Roosevelt administration is at stake in the oil situation. If the authority of the oil code can be successfully challenged what is to prevent the entire recovery policy being blown to pieces?

There are elements in every industry and business, as in oil, who resent governmental interference and who are waiting for the first break. They would seize failure of the Federal oil administration as a demonstration that the recovery plan would not work.

The administration at Washington is fully aware of this. It realizes that it must make good on oil.

This is the point that many hesitating and backward-pulling people in the oil business have not taken into account. They think that because there is a temporary hitch over signing the agreements, or a legal doubt raised here or there, or Texas demands a larger allowable that the whole program is going to collapse.

The wish is, of course, father to the thought, especially if the wisher wants to buy cheaper crude or cheaper gasoline. Rumors of the "blowing-up" of proration have been used to weaken the market before now.

But today it is different. There is no question of the administration's determination to force the oil business to a satisfactory conclusion. There is no question that it will use every power at the disposal of the Federal government to see it through.

The admitted authority of Congress over interstate commerce, conveyed to the oil administration by the prohibition of the movement of illegally produced oil, has tremendous possibilities as an agency of enforcement.

The licensing power given to the President under the recovery act has not been invoked.

"Congress is still in session" and responsive to Presidential leadership, and those who persist in obstructing stabilization of the oil business may find themselves facing a governmental control they cannot evade.

A sample of what is being considered is the tentative bill being discussed by members of the Planning and Co-ordination Committee and other oil men at Washington which seeks to apply the prohibition against the transportation of illegally produced oil in interstate or foreign commerce to intrastate hot oil.

The reasoning is that interstate commerce is injuriously affected by an excessive production of crude and that remedial legislation to be effective must incidentally apply to intrastate and foreign commerce as well.

The proposed bill would authorize the Federal petroleum agency "to establish quotas from all or any of the States, pools, properties, and storage sources in the United States" and prohibit any person from placing in commerce production in excess of that quota.

Quotas so established, as distinguished from production allowables, "need not necessarily conform to production allowables, the purpose being to prevent the movement in commerce of surpluses which would demoralize commerce, and to equitably distribute the business of supplying the product allowed to move."

Drastic as this extension of Federal authority may seem to some the fact that it is being considered, if necessary, proves the determination to stabilize the industry, if not by agreement, then by compulsion.

It is not simply a question of any one agreement or of a return to running wild. The administration at Washington, supported by the great bulk of the industry, is not going to permit any return to the conditions we have left behind.

There may be backsets, as during the past week, but there should be no doubt of the ultimate outcome. The administration which has brought us thus far on the road to recovery has no intention of abandoning its purpose which is now a test of its whole program.

A Real Danger

The agitation of the coal interests for a tax on natural gas is being redoubled, encouraged, it is said, by reports that some sort of pledge to support such a tax was used to put through the coal code.

Anyway, there is no doubt of the earnestness and aggressiveness with which the agitation for this tax of ten cents per thousand feet on gas sold for industrial purposes is being pressed upon Congress. It requires the immediate attention and efforts of the oil and gas industry to combat it. It is a real danger.

It should not be difficult to expose the hollowness of the pretension used by the coal interests for this socalled "equalization tax."

The woes of the coal industry are the result of its own faults and not because of the relatively small competition from natural gas in industrial plants.

The coal industry, like the oil industry, suffers primarily from overproduction. Its plea for the tax as a protection to labor, that more labor is required to produce coal than to produce gas, is bolstered by the fact that there are so many miners occasionally employed few ever get a full year's work.

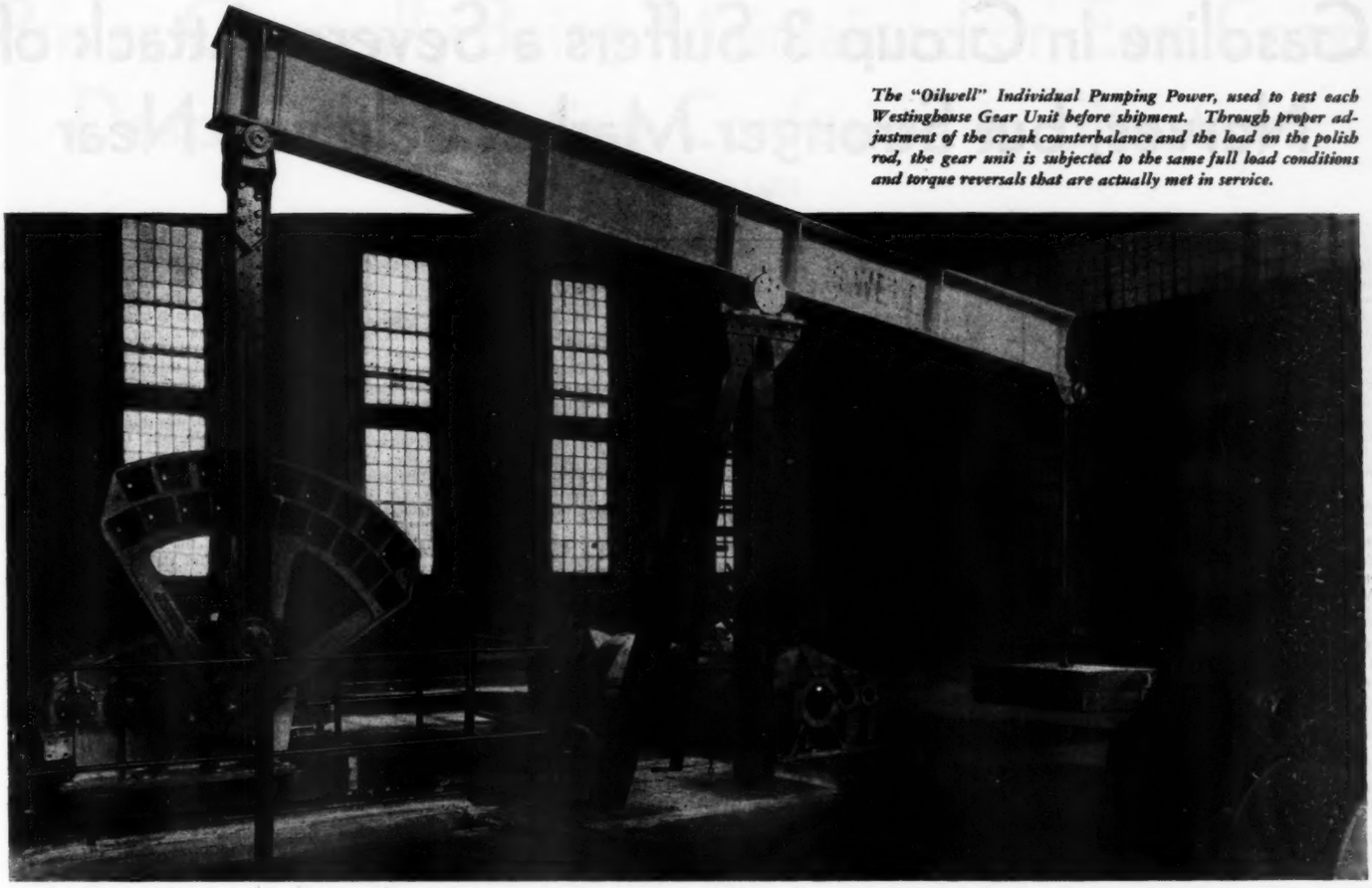
Competition of natural gas and fuel oil had nothing to do with that situation. The mechanization of mining and increased efficiency in operation, enlarging output per man, had more to do with causing the coal industry's present plight than the competition of natural gas.

But if the coal argument does not stand up the case for the natural gas industry is unanswerable. The seasonal delivery of gas to industrial plants makes practicable the maintenance of peak load supply to the domestic consumers who could not enjoy this convenient fuel at permissible cost otherwise.

A tax of ten cents per thousand feet on gas used in industrial plants would shift this burden to the backs of the domestic consumers. The continuance of the industrial business is a necessity for the protection of the domestic consumer.

The competitive effect of natural gas in the industrial field is trifling compared to the total coal production. It is being magnified, like the labor factor, as propaganda for an "equalization tax" to give the coal industry opportunity to fix a monopoly price for fuel, industrial and domestic.

NRA MEMBER U.S. WE DO OUR PART



The "Oilwell" Individual Pumping Power, used to test each Westinghouse Gear Unit before shipment. Through proper adjustment of the crank counterbalance and the load on the polish rod, the gear unit is subjected to the same full load conditions and torque reversals that are actually met in service.

WE "PUMP YOUR WELL"

to Test the Gear Units you buy

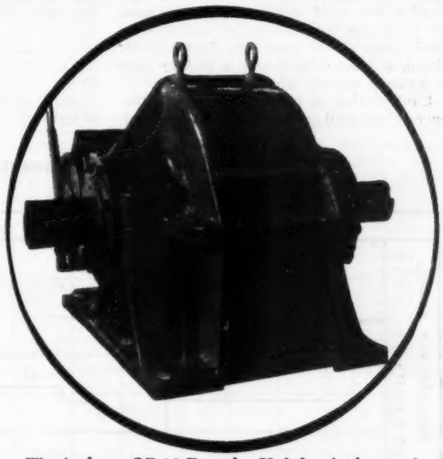
TO make certain that each gear unit you buy will meet the most severe requirements of oil field service, we virtually "pump your well" with it before shipment.

By means of the "Oilwell" unit pictured above, we simulate actual pumping conditions. Through adjustments of the crank counterbalance and the load on the polish rod, the gear unit is subjected to full-load conditions, and to the torque reversals it must meet in service.

This test assures you that there are no weak links in the quality parts and materials built into these units . . . and that the liberally proportioned cases, heat-treated helical gearing and shafts, and the sturdy anti-friction bearings will give uninterrupted, trouble-free operation.

Because they are weather-proof, these units require no housing. They can be driven by electric motor, oil engine, or by single or multi-cylinder gas engines. Units are available for single or twin-crank operation, or for pumping a second well through a back crank.

Call the nearest Oil Well Supply Company office or mail the coupon below for complete information.



Westinghouse OP-35 Pumping Unit for single or twin-crank pumping, or the pumping of a second well through a back crank. Available in ratings of 20, 25, 35, and 45 hp. at 20 strokes per minute.

DISTRIBUTED BY

OIL WELL SUPPLY COMPANY

(SUBSIDIARY OF UNITED STATES STEEL CORPORATION)

Westinghouse

Quality workmanship guarantees every Westinghouse product

SEND FOR INFORMATION

Westinghouse Electric & Manufacturing Company
Room 2-N—East Pittsburgh, Pa.

Gentlemen: Please send information on Westinghouse Oil Well Pumping Units.

Name .....

Company ..... T 79935

Position .....

Address ..... O&GJ 2-22-34

Gasoline in Group 3 Suffers a Severe Attack of Nerves, but Stronger Market Believed Near

By T. F. SMILEY

The gasoline market in Oklahoma (Group 3) territory suffered a severe attack of nerves in the last week, due primarily to the Federal District Court decision in the cases of the Amazon Petroleum Corp. and the Panama Refining Co. When the decision, interpreted by many as giving aid and comfort to producers and refiners of hot oil in Texas, was made public Tuesday of last week there was no clear and instant response, either favorable or unfavorable, on the part of the gasoline market. It produced puzzled regret rather than consternation.

The next day, however, uneasiness was manifested, succeeded swiftly by worried concern. By Friday the trade had worked itself into something resembling a panic. Sellers swarmed so thickly they got in each other's way. Buyers were in hiding. Anything that looked like an order was the signal for a scramble.

Prices crumbled. Low octane U. S. Motor material which had been commanding 4 cents on Tuesday dropped one eighth-cent after another till it was offered at 3½ cents, with few takers or none. The other grades performed in like manner.

In the East Texas area it was reported that small refiners in need of money let cash buyers, if providence sent them, name virtually their own prices.

With the opening of the present week the stampede had pretty well exhausted itself. Although there were no signs of renewed interest or any noticeable effort to push quotations upward, the clamor had died down. But there was no business, and observers offered no predictions as to what lay immediately ahead, although there was a feeling that a stronger market was not far off.

Contributing to the blue funk was the uncertainty still surrounding the eventual fate of the pooling and marketing plans. Rumors that the signatures required to make it operative could not be obtained gained wide circulation. Later reports that enough signatures had been received revived hopes that the stabilization expected from this plan might be achieved after all.

Natural gasoline, which for three weeks had been riding high, almost untouched by influences that were depressing the refinery product, was caught in the swirl and prices throughout the list went down one-quarter to three-eighths of a cent. The marked slump in the buying of refinery gasoline had the inevitable effect of slowing up purchases of the naturals. Small independent manufacturers of natural gasoline who depend upon spot business for their output found their stocks accumulating and made price concessions in order to move them. The inevitable result of course was a general downward drift in quotations. The larger companies have contracts which carry them, little hurt, through periods of stress like that of the last week.

Trying to Account for Rise

Other factors in the decline of the naturals were pointed out. For one thing, the advances they recorded against the current during recent weeks found no entirely satisfactory explanation. Some, and perhaps they were as nearly right as anybody, accounted for it on the basis of the general discussion of inflation and higher commodity prices. Some of the owners of natural gasoline stocks, these analysts say, reasoned this way: "Commodity prices are going up. Natural gasoline is a commodity. Therefore natural gasoline prices are going up. I'll hold my material for the higher price."

So, these market observers say, the stocks were held, this action having really some small tendency to increase quotations. But in the absence of any fundamental strength, the higher price structure, though pleasant to look at, was not built to weather storms.

Helping to humble the natural gasolines too is the fact that at this season of the year refiners preparing for the warmer weather of spring and summer, are beginning to tame their product, which means that they require a smaller proportion of natural to produce the desired volatility of motor fuel.

Other Products

Colder weather which swept over much of the country in the last week had a slightly steadying effect on the heating oils, but the general trend was downward, with prices below those of the week before.

There is still strong demand for 18 to 24 gravity fuel oil for use by many industries as fuel and by the larger refineries as cracking stock. Much of this material is being purchased at 55 cents a barrel today by interests which refused to pay 10 cents a barrel less than a year ago.

Kerosene prices held, but the demand was slightly off. Little change was noted in the market for neutrals, with prices unchanged. Bright stocks were steady and cylinder stocks were firm, with fair export demand. Wax was firm. There were no changes in wax quotations and stocks were reported to be well bought up.

Refined Oil Market Barometer

Derangement of the gasoline market in parts of the Mid-Continent area was regarded as largely a local condition, without important significance in the trade at large and likely to disappear as swiftly as it came. In most other districts prices were unchanged and on the East Coast they were up. A feeling prevailed that the Federal Government would move with greater speed in its efforts to stabilize the market in petroleum products and that the next few weeks would see the situation much nearer clarification.

Mid-Continent—Refinery gasoline market steadying after period of confusion. Naturals down. Furnace oils weak.

East Coast—Domestic and export gasoline higher. Wax strong. Whole market has firm undertone.

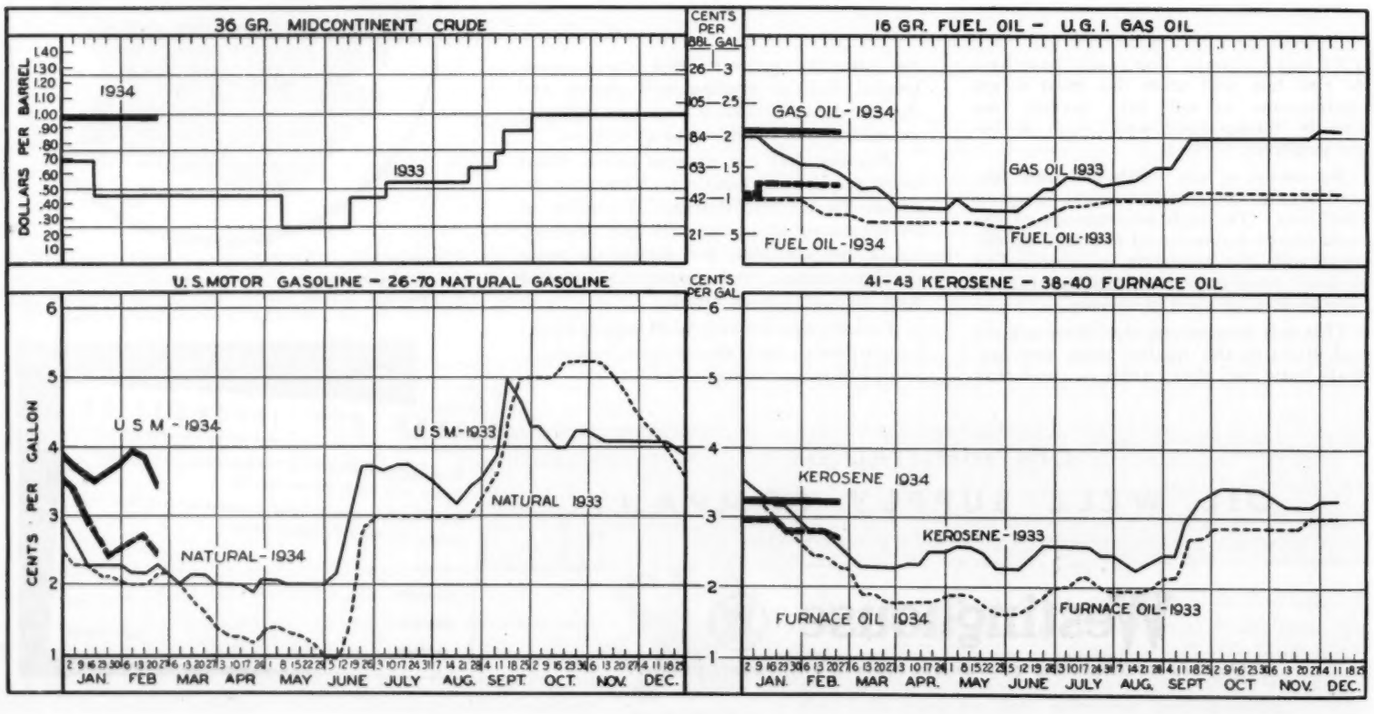
Gulf Coast—Domestic gasoline soft, but export prices up. Fuels strong. Lubricants steady but slow.

Pennsylvania—Cold weather helping burning oils. Gasoline slightly weaker. Kerosene up.

California—Gas oil and Diesels softer, with prices lower. Kerosene up. Other quotations unchanged.

Chicago—Gasoline weak, with prices lower. Naphthas soft. Furnace oils weak.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)


36 GR. MIDCONTINENT CRUDE
DOLLARS PER BARREL
1934
1933
CENTS PER BBL GAL
16 GR. FUEL OIL - U.G.I. GAS OIL
GAS OIL - 1934
GAS OIL 1933
FUEL OIL - 1934
FUEL OIL - 1933
U. S. MOTOR GASOLINE - 26-70 NATURAL GASOLINE
CENTS PER GALLON
U S M - 1934
U S M - 1933
NATURAL - 1934
NATURAL 1933
CENTS PER GAL
41-43 KEROSENE - 38-40 FURNACE OIL
KEROSENE 1934
KEROSENE - 1933
FURNACE OIL 1934
FURNACE OIL - 1933
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

Prices Generally Being Maintained on East Coast Despite the Existing Confusion in Situation

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, Feb. 19.—Tank car, small barge and package sellers of petroleum products in most cases are maintaining the prices in effect since the first of the month despite an unsettled market situation in the East Coast area. Federal Court decisions and daily developments at Washington over the past week have left the refined market trade in somewhat of a daze and few can be found who are willing to hazard a guess as to probable immediate and future trends in the prices of the products they sell or buy.

The fact that prices generally are being maintained despite the existing confusion can only be interpreted as an indication of underlying strength which many of the trade earlier in the year did not think existed. Export and domestic buyers of the several grades of gasoline are constantly endeavoring to secure price concessions in both small and large shipments. So far as known their efforts have been unsuccessful. The quotations given export and domestic buyers for delivery over the next 30 to 90 days indicate that sellers believe the market trend will be higher rather than lower over that period. Actually very little open market trading in gasolines is being closed, both buyers and sellers being willing to wait in the hope that the next few days will bring some definite ruling from Washington in regard to marketing and pooling agreements of a permanent nature.

In this connection the point is stressed that it is useless to attempt to work out any long time agreements on gasoline—the usual method of selling in this territory—for the reason that some ruling at Washington may nullify the contracts. The ruling at Washington last week to the effect that all commercial discount contracts made between August 19, 1933, and February 2, 1934, were void, is a case in point.

This announcement followed the ruling of the oil administrator that the spread to commercial accounts buying on a tank wagon basis should not be more than 2 cents under the service station price. During the period mentioned there have been thousands of contracts closed, a majority of which in one form or another give the buyer a better price than is allowed under the new ruling. It is understood that many of the sellers have notified their customers of the new development and presumably these buyers will be forced to pay higher prices immediately. Others are said to be waiting the adoption of the new contract forms which provide a different setup for the commercial accounts.

Effect of Decisions

Probably the most disturbing development of the past 10 days to the local trade is the Federal Court decision largely nullifying Federal control in Texas so far as intrastate operations are concerned. Market observers are closely watching new developments in regard to state control taking the position that it will shortly determine the trend in gasoline prices in this territory and to a lesser extent all other refinery products. They fear a large increase in Texas crude oil and gasoline production which affects the eastern markets in two ways. In the domestic end it means increased shipments of low priced crude oil and gasoline to East Coast buyers and in the export end foreign markets are endangered by the cheap crude available to plants located in foreign countries. The experience of 1932 and the early part of 1933 when the market for East Texas and Gulf Coast crude oil and gasoline came to dominate coastwise and export markets is too recent for the local trade to have any delusions as to what will happen if Texas production is not adequately controlled. There has been some improvement in this situation over the past month after a period in early January when a declining East Texas and Gulf Coast gasoline market brought price reductions in this territory.

Most market students in this territory place all the stress on the curtailment of production as the explanation of the improvement that has materialized in prices over the past six months and they are certain that the continuance and tightening of this program of balancing supply and demand is the key to continued improvement in the future. An observer can readily detect a luke warm attitude in regard to the necessity of the marketing agreements and even the pooling agreements which are now before the industry for final approval. Many are willing to "give them a trial" but the experience of the past few months in which many of the code's provisions in regard to marketing practices have been evaded or nullified in one form or another has not been conducive to an enthusiastic reception for further experiments along similar lines.

Demand and Prices

The tank car movement of gasoline from refineries to bulk stations showed some improvement over the past week although weather conditions continue unfavorable. In certain sections of New York and New England snow and low temperatures have reduced gasoline consumption to less than 50 per cent of the normal demand at this season of the year. All the major refiners and most of the marketing concerns are quoting a low of 5½ cents for low octane gasoline in tank car and small barge shipments. The middle octane prices range from 5¾ to 6 cents and the high octane material (65 and above) range from 6 to 6¼ cents.

The demand for all grades of furnace oils continues heavy and there has been some inter-refinery buying to maintain adequate supplies for tank wagon distribution. Tank car and tank wagon prices, however, are unchanged ranging in the case of the tank car quotations from 4 to 5¼ cents depending on the grade. Kerosene demand is also heavy with prices unchanged at 5¼ to 5½ cents.

No special activity is reported in bunker fuels at $1.20 per barrel but supplies are limited and a few sellers are confining their sales to contracts and are not active in bidding on spot business. The gas oil demand is said to have improved due to the increased requirements of the artificial gas industry. Prices quoted on U.G.I. material range from 4 to 4¼ cents.

Lubricants and wax are unchanged in price. There is a shortage of low cold test bright stocks and neutral oils, especially of the 200-3 grade.

WOODLEY PETROLEUM REPORT

SHREVEPORT, La., Feb. 19.—At the annual meeting of the Woodley Petroleum Co., the annual report showed a net profit before reserves for depreciation and depletion of $1.38 per share for 1933. After allowance for depletion and depreciation net earning per share was 62 cents. The directors announced a dividend distribution of 10 per cent in common stock to stockholders of record March 12, 1934, this not to be new stock but stock held in the treasury acquired by the corporation in the open market in the past two years and does not increase the number of shares of stock outstanding. The board also declared a quarterly dividend of 10 cents per share in cash to be paid to stockholders at the end of the third quarter of 1934. The officers and directors were re-elected.

NEW A.P.I. ADDRESS

Effective February 24, the headquarters of the American Petroleum Institute will be Room 2040, 50 West Fiftieth Street, New York, N. Y.

American Petroleum Institute Weekly Refinery Statistics

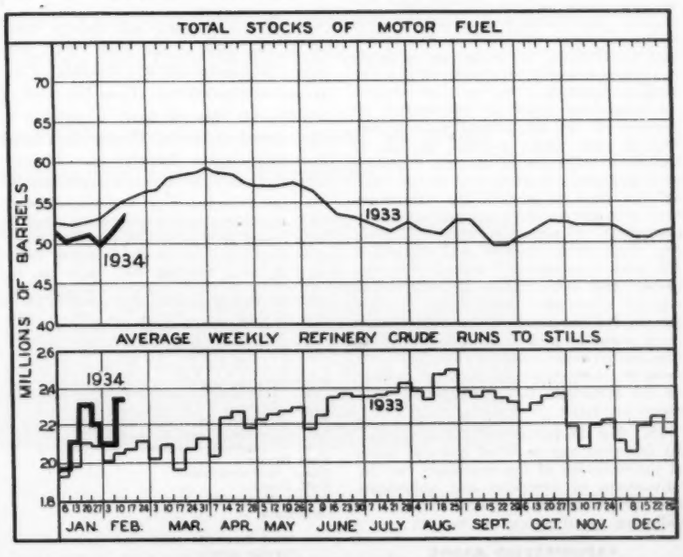
Figures below reported for week by American Petroleum Institute. (1) Per cent refinery capacity represented. (2) Daily average crude runs to stills. (3) Total motor fuel stocks. (4) Gas oil and fuel oil stocks. All figures in 42-gallon barrels.

Week Ending February 17, 1934, Compared to Week Ago

	Week Ending Feb. 17, 1934				Week Ending Feb. 10, 1934			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	449,000	15,806,000	4,788,000	100.0	469,000	5,586,000	4,817,000
Appalachian ...	92.6	83,000	1,893,000	874,000	92.6	80,000	1,278,000	923,000
Ind., Ill., Ky. ..	97.3	313,000	8,077,000	3,733,000	97.3	289,000	4,495,000	3,961,000
Okla., Kans., Mo.	82.1	238,000	5,869,000	3,116,000	82.1	245,000	3,567,000	3,279,000
Inland Texas ..	60.2	88,000	1,274,000	1,699,000	60.2	89,000	886,000	1,672,000
Texas Gulf	98.1	443,000	5,081,000	5,115,000	98 1	452,000	4,902,000	4,948,000
La. Gulf	100.0	112,000	1,751,000	1,448,000	100.0	127,000	949,000	1,638,000
N. La. and Ark.	92.6	56,000	293,000	621,000	92 6	58,000	189,000	594,000
Rocky Mtn.	78.8	30,000	1,061,000	749,000	78 8	33,000	1,025,000	741,000
California	96.9	412,000	13,944,000	87,918,000	96 9	394,000	7,342,000	88,568,000
Total U. S. ...	92.4	2,224,000	55,049,000	110,061,000	92.4	2,236,000	30,219,000	111,191,000

Week Ending February 17, 1934, Compared to Year Ago

	Week Ending Feb. 17, 1934				Week ending February 18, 1933			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	449,000	15,806,000	4,788,000	99.1	440,000	14,234,000	7,191,000
Appalachian ...	92 6	83,000	1,893,000	874,000	95.0	81,000	1,954,000	902,000
Ind., Ill., Ky. ..	97.3	313,000	8,077,000	3,733,000	97.5	294,000	7,762,000	3,085,000
Okla., Kans., Mo.	82.1	238,000	5,869,000	3,116,000	84.9	209,000	5,063,000	2,786,000
Inland Texas ..	60.2	88,000	1,274,000	1,699,000	56.4	82,000	1,549,000	2,135,000
Texas Gulf	98.1	443,000	5,081,000	5,115,000	97.7	411,000	6,329,000	6,756,000
La. Gulf	100.0	112,000	1,751,000	1,448,000	97.3	86,000	1,491,000	2,133,000
N. La. and Ark.	92.6	56,000	293,000	621,000	88.5	54,000	230,000	620,000
Rocky Mtn.	78.8	30,000	1,061,000	749,000	90.8	31,000	1,413,000	567,000
California	96.9	412,000	13,944,000	87,918,000	94.6	384,000	15,326,000	99,135,000
Total U. S. ...	92.4	2,224,000	55,049,000	110,061,000	91.6	2,072,000	55,461,000	125,310,000



Data based on weekly reports of American Petroleum Institute. Figures for week just ended not shown in graph but are included in accompanying table.

West Coast Marketers Bound in New Cartel

(Continued from Page 10)

pile and deliver to the committee a statement of the quantities of all gasolines sold by said company in each state and territory in the Pacific Coast region (as defined in Section 1 hereof) during the preceding calendar month. From such statements the committee shall compute, with respect to each company, the amount, if any, by which that company shall have oversold or undersold its quota during said month.

Intercompany Adjustments

15. The committee shall notify each company monthly of the amount, if any, of its oversales or undersales during the preceding month, and each company overselling or underselling shall conscientiously endeavor to re-establish its proper sales position in the ensuing month. The committee shall further notify each company at the end of each three months' period from and after the effective date of this agreement, of the amount, if any, by which that company shall have oversold or undersold its quota during said three months' period, and shall prescribe, to each company overselling or underselling, the manner in which such oversales or undersales are to be adjusted.

16. Upon notification by the committee, the overselling companies shall purchase from the underselling companies, and the underselling companies shall sell to the overselling companies, gasoline in the amount and manner, and at the times and prices prescribed by the committee. Such intercompany adjustments shall be so made that the total amount purchased by the overselling companies shall be the total amount of their gasoline oversales, and shall equal the total amount of undersales by the underselling companies. All oversales and undersales shall be adjusted separately for each state and territory in the Pacific Coast region; (example: A company overselling its quota in the State of Washington by 100,000 gallons within a three months' adjustment period and underselling its quota in the State of California by 50,000 gallons in the same period shall purchase 100,000 gallons from companies underselling in Washington, and sell 50,000 gallons to companies overselling in California.) Delivery of gasoline purchased and sold in all such intercompany adjustments shall be at the seller's refinery unless otherwise mutually agreed by both parties to the adjustment.

17. Since certain of the companies are lacking in flexibility of refinery operation, and more particularly in gasoline storage capacity, the committee shall arrange and prescribe such intercompany adjustment purchases and sales in a manner calculated to best accommodate the physical requirements of all of the companies. To this end, and to the extent that underselling companies are currently without capacity for storage of gasoline surplus resulting from such undersales, the committee shall be empowered, in advance of the adjustment date at the end of each three months' period, to formulate estimates of current oversales by companies, and from time to time and at any time to require the companies thus assumed to have oversold to make emergency adjustment purchases of gasoline from such underselling companies. All such "emergency" adjustment purchases and sales made in advance of regular adjustment dates shall be subject to readjustment at the end of each three months' period, to give effect to final adjustments applying to actual oversales and undersales, as then determined by the committee in the manner hereinabove set forth.

18. For the purpose of this agreement, all intercompany sales of gasoline made at the direction of the committee for the adjustment of oversales and undersales shall be gasoline of a quality having the following specifications or better:

VAPORIZATION RANGE

10%	122-176° F. Maximum
50%	284° F. Maximum
90%	392° F. Maximum
End	437° F. Maximum
Minimum octane	59

19. It is the intention of this agreement that the price which overselling companies shall pay to underselling companies shall be a price which shall give said overselling companies no profit on their oversales. To this end, the committee shall establish the price to be paid in each instance for intercompany gasoline adjustment purchases, on one of the following bases:

(a) The current minimum refinery base tank car price applying to gasoline of less than 63 octane, as established from time to time by order of the Federal oil administrator, or

(b) The weighted average retail price for gasoline of less than 63 octane maintained in the period under adjustment in the city of Los Angeles by the companies in the group in which the overselling company is classified, less 5½ cents per gallon, or

(c) If, in the opinion of the committee, neither of the bases described in the preceding Subparagraphs (a) and (b) will accomplish the objectives herein defined as to the adjustment price, then the committee shall establish a price that in its best judgment will accomplish said objective.

Penalties

20. At the end of each six months' period from and after the effective date of this agreement, the committee shall determine, with respect to each company, the amount, if any, by which that company shall have oversold or undersold its quota during said six months' period. Penalties shall be imposed upon the companies, if any, which have either exceeded or failed to maintain their quotas, such penalties to be determined by the committee on the following bases:

(a) Overselling.—Each company that shall have oversold its quota in any such six months' period by more than 3 per cent of the volume which said quota represents shall be required to pay to the committee a fine of 1 cent per gallon for each gallon of gasoline oversales in excess of 3 per cent but less than 4 per cent; 2 cents per gallon for each gallon of gasoline oversales from 4 per cent to 5 per cent; and said fine shall be further increased at the rate of 1 cent per gallon applied to each gallon for each additional 1 per cent of gasoline oversales. All monies paid to the committee as fines pursuant to this provision shall be distributed to all of the companies not overselling in the same period, according to their respective quotas in effect in the six months' period preceding the date on which such fines are assessed. All such fines imposed by the committee hereunder are due and payable within 10 days of notification by the committee. In the event of any termination of this agreement, whether at the end of a six months' period as hereinabove described or otherwise, fines for oversales, if any, accrued at time of said termination shall nevertheless be determined by the committee and paid by the overselling company or companies, on the basis and in the manner herein provided.

(b) Underselling.—Each company that shall have undersold its quota in any such six months' period by more than 3 per cent shall have its quota for the next ensuing six moths' period reduced by one-quarter of the amount of its said deficiency, but not to exceed, in any event, 10 per cent of such underselling company's quota in the six months' period preceding such reduction. The total volume so deducted from the quotas of all underselling companies shall be prorated among all of the companies not underselling in the same period, on the basis of the quotas in effect in the six months' period preceding the effective date of such quota deductions.

21. It is provided, however, that undersales and oversales which, in the judgment of the committee, result directly from strike, disaster, fire, earthquake, or other causes beyond the control of the underselling and overselling companies, shall not be subject to the penalties herein prescribed.

22. Any and all penalties (as provided in Paragraph 20 hereof) otherwise applicable hereunder as a result of oversales and undersales occurring during the first three months' period from and after the effective date of this agreement, shall be suspended, but thereafter the penalty provisions of this agreement, as herein set forth, shall be in full force and effect.

Exceptions to Penalties

23. In the event and to the extent that any overselling company or companies shall have oversold in any six months' period as a direct result of having sold or supplied a part of the quota or quotas of any company or companies that shall have undersold during the same period, at the request of such underselling company or companies, the penalties prescribed in Paragraph 20 hereof shall not apply; provided, however, that the committee shall be given written notification of any and all such agreements between companies prior to the end of each such six months' period.

24. In the event and to the extent that overselling companies shall have oversold in any six months' period hereunder, as a direct result of having sold to purchasers theretofore supplied by any company or supplier not a party to this agreement, such gasoline shall be excluded in the application of the penalty provisions of this agreement, and intercompany adjustment purchases made by companies having thus oversold shall be made at a price representing the net refinery realization from such oversales, as determined by the committee. Companies claiming, under the provisions of this paragraph, exemption from penalties for gasoline asserted to have been sold to purchasers theretofore supplied by suppliers not parties to this agreement, shall submit to the committee satisfactory evidence in support of such claims, and the findings of the committee in allowing or rejecting such claims shall be final and conclusive.

Group Price Differences

25. It is agreed by the companies, as a measure essential to the accomplishment of the basic purposes of this agreement (as set forth in Section 3 hereof, "Intention of Parties"), that maximum differentials as between gasoline price schedules of the respective companies in each of the three groups, designated in Section 2 hereof and listed in Schedule 1 hereof, shall be established and maintained. The said maximum differentials that shall apply on the date that this agreement becomes effective are specifically set forth in "Schedule 3" attached hereto and made a part hereof. Said maximum differentials, as set forth in said "Schedule 3," are established on the best estimates that can be made in advance of the operation of this agreement and are designed to preserve the relative gasoline sales positions of the companies and of the respective groups in which they are classified, in a way that will give practical effect to the respective company quotas established by this agreement.

26. As specified in said "Schedule 3," the prices to be maintained by the companies in Group A shall be "base prices" for the purpose of this agreement. It is understood and agreed by all of the companies that in the operation of this said differential schedule, the order of orders of the Federal oil administrator as to minimum prices, and all of the provisions of the code of fair competition for the petroleum industry as to sales below cost, shall be fully observed.

27. The committee shall from time to time, and at any time, make such changes in such maximum differentials as in its judgment may be necessary to the preservation at all times of the respective quota positions of the companies and groups, provided, however, that changes, if any, shall not be made at any time for any reason other than that herein stated. The companies, and each of them, in Groups B and C, hereby undertake and agree to so maintain their gasoline price schedules throughout the period of this agreement that the maximum differentials applying to the groups in which they are respectively classified, will not be exceeded as such maximum differentials are established hereunder and changed or modified from time to time by the committee pursuant to the provisions of this paragraph, and the companies in Group A hereby undertake and agree to so maintain their gasoline price schedules throughout the period of this agreement as to fully comply with the provisions of Paragraph 26 hereof, except to the extent that the companies in all groups are prevented from so doing under the terms and conditions of valid written contracts executed prior to November 1, 1933, provided, however, that all such contracts shall be cancelled or terminated as soon as any cancellation or termination thereof can be legally accomplished.

28. In the event that any one or more of the companies shall, at any time or times during the terms of this agreement, consider it essential to the preservation of sales volume and marketing position to meet competitive prices extended by

Administrator's Report on Crude Stocks

Stocks of domestic and foreign crude oil at the close of the week ended February 10 totaled 340,631,000 bbls., a decrease of 836,000 bbls. from the total of 341,467,000 bbls. on hand at the end of the preceding week, Harold L. Ickes, Secretary of the Interior and administrator of the code of fair competition for the petroleum industry, announced today. This decrease, which follows a slightly larger decline during the previous week, comprised a decrease in domestic crude oil stocks of 986,000 bbls. and an increase in foreign crude oil stocks of 150,000 bbls.

Current reports of the industry indicate increases in crude petroleum and crude runs to stills during the week ended February 10. Imports of crude oil continued to decline and averaged 71,000 bbls. daily as compared with 75,000 bbls. during the previous week. The approximate daily average balance of crude oil during the week ended February 10 was as follows (barrels): Production, 2,320,000; imports, 71,000; decrease in stocks, 120,000, equals runs to stills, 2,375,000; exports, fuel, losses, etc., 136,000.

CRUDE PETROLEUM STOCKS REPORTED BY COMPANIES HOLDING 100,000 BBLS. OR MORE

Grade of crude oil—	Stocks held by reporting companies Feb. 3, 1934 (bbls.)	Stocks held by reporting companies Feb. 10, 1934 (bbls.)	Change from Feb. 3, 1934 (bbls.)
Pennsylvania Grade	5,283,000	5,161,000	—122,000
Other Appalachian, including Kentucky	1,248,000	1,276,000	+28,000
Lima, Northeast Indiana, Michigan	1,577,000	1,607,000	+30,000
Illinois, Southwest Indiana	11,269,000	11,332,000	+63,000
North Louisiana and Arkansas	11,839,000	11,860,000	+21,000
West Texas and Southeast New Mexico	31,889,000	31,668,000	—221,000
East Texas	44,278,000	43,502,000	—776,000
Other Mid-Continent	153,585,000	153,603,000	+18,000
Gulf Coast	16,046,000	15,826,000	—220,000
Rocky Mountain	27,229,000	27,309,000	+80,000
California	34,124,000	34,237,000	+112,000
Total domestic crude	338,367,000	337,381,000	—986,000
Foreign crude	3,100,000	3,250,000	+150,000
Total crude	341,467,000	340,631,000	—836,000

LICENSES granted under United States and Foreign Patents for: Cross • de Florez • Holmes-Manley • Tube and Tank Cracking Processes and Combination Cracking Units.

Licensing Agents:
The M. W. KELLOGG CO.
225 Broadway · New York
or its
European Representative:
Compagnie Technique des Petroles · 134 Boulevard Haussmann · Paris, France

CRACKING PROCESSES

Successful cracking processes are the outgrowth of comprehensive research and practical development.

Experiments in miniature, in glass, in the laboratory, test runs in pilot plants and finally the coordination and study of results secured from installations throughout the world determine the most efficient process.

Under the broad licensing rights of Gasoline Products Company, combination units may employ any or all of the outstanding features of the four major cracking processes offered by this organization. Special design features may thus be incorporated to meet a particular problem of the individual refiner.

Before you make a decision involving investment in cracking equipment, we invite you to confer with us regarding the latest developments in pyrolytic cracking.

GASOLINE PRODUCTS COMPANY

INCORPORATED

11 COMMERCE STREET · NEWARK, NEW JERSEY

suppliers not parties to this agreement, which prices are less than the prices resulting from application of the provisions of Paragraphs 25, 26, and 27 hereof, then such company or companies shall notify the committee, requesting specific exception to such provisions. Immediately upon receipt of such notification the committee shall investigate the circumstances so reported and shall develop and recommend specific exception to the extent and in the manner it deems to be appropriate in the circumstances. Such recommendation shall be promptly communicated to all of the companies, and upon ratification by two-thirds of the companies in Groups A and B combined, and two-thirds of the companies in Group C, the company or companies thus making application for exception shall have authority to proceed in the manner and to the extent so recommended and ratified.

29. It is expressly understood and agreed by the companies in Group A, and each of them, that the gasolines of their respective affiliated or subsidiary companies, if any, in Groups B or C, shall not be sold at the company operated stations and/or exclusive dealer outlets of such companies in Group A.

Crude Supply

30. If at any time during the term of this agreement any one or more of the companies shall be unable to procure sufficient crude petroleum and/or natural gasoline to manufacture the amount of gasoline needed for quota requirements, such company or companies shall notify the committee of such inability and of the amount of such deficiency. The committee shall thereupon arrange with such of the other companies which may have or be able to procure crude petroleum and/or natural gasoline in quantities in excess of their requirements, to sell to the company or companies reporting such deficiencies such quantity of suitable crude petroleum and/or natural gasoline as may be required, at the then posted price therefor, plus reasonable costs of delivery as determined by the committee. Deliveries shall be made at the nearest practicable point to buyer's plant, consistent with seller's available supply. The companies, and each of them, agree and undertake, to the extent of their then capacity to perform, to supply such crude petroleum and/or natural gasoline deficiencies, if any, on the basis prescribed by the committee in such instances, subject, however, to full conformance with current orders and regulations of the Federal oil administrator and his properly constituted agencies under the code of fair competition for the petroleum industry.

Keep Records

31. Each company shall keep true and complete records of all transactions pertinent to this agreement. Said records shall be made available for inspection by the committee or its nominee, and each company shall furnish to the committee all information which the committee may reasonably request in the administration of this agreement.

Protection

32. In the event and to the extent that the operation of this agreement, pursuant to the specific provisions hereof, shall in the judgment of the committee, result to the disadvantage or inequity of any one or more of the companies, said committee is hereby empowered to develop and establish such methods and measures as are, in its judgment, essential to the primary objectives of this agreement, as defined in the second paragraph of Section 3 hereof, and to the extent that the committee's findings and determinations pursuant to the provisions of this paragraph shall so dictate, the companies, and each of them, agree to abide by and conform to such determinations and findings in the correction and adjustment of such individual disadvantages and inequities, if any.

Period of Agreement

33. As hereinbefore stated, this agreement is made and entered into pursuant to the provisions of the code of fair competition for the petroleum industry, and more particularly pursuant to the provisions of Section 5 of Article 1 of said code. It shall become effective when approved by the President of the United States, and when so approved shall be deemed, so far as said Pacific Coast region is concerned, to be a part of said code, and subject to the penalties thereof, and shall continue in force until June 15, 1935, unless said code, or the National Industrial Recovery Act, is sooner terminated by the President, in which event this agreement shall also then terminate. In the event that the period of the National Industrial Recovery Act and the code of fair competition for the petroleum industry is extended from and after June 15, 1935, then, upon agreement by all of the parties hereto, this agreement shall also be continued in full force and effect throughout the period of any such extension of said act and said code, or for such shorter term as may then be agreed by the companies. It is provided, however, that the administrator of said code, at any time after the expiration of 12 months from the date hereof, may in his discretion, terminate this agreement upon the written request of two-thirds of the companies in Groups A and B combined, or two-thirds of the companies in Group C.

Execution of Agreements

34. The agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, and such counterparts together shall constitute one instrument, with the same effect as if all companies executing such counterparts had executed one instrument. Each such counterpart shall name, in Schedule 2 thereof, only the quota of the company for which such counterpart is executed.

35. This agreement shall extend to and be binding upon the successors and assigns of the companies, and each of them.

SCHEDULE NO. 1

Company Groups

Group A.—Associated Oil Co., General Petroleum Corp. of California, Richfield Oil Co. of California, Shell Oil Co., Standard Oil Co. of California, Texas Co., and Union Oil Co. of California.

Group B.—Gilmore Oil Co., Rio Grande Oil Co., Seaside Oil Co., Signal Oil & Gas Co. of California, Sunset Pacific Oil Co., Guardian Oil Co.,[1] and Rockett Gasoline distributors[1].

Group C.—William P. Andrews Oil Co., B. & F. Oil & Refining Co., R. R. Bush Oil Co., Caminol Co., Ltd., Edington Oil & Refining Co., Ltd., Estado Petroleum Corp., Ltd., Exeter Oil Co., Ltd., Hancock Oil Co. of California, Lake View Oil & Refining Co., MacMillan Petroleum Corp., Mohawk Petroleum Co., Monarch Refineries, Ltd., Norwalk Co., Olympic Refining Co., Petrol Corp., Rice Ranch Oil Co., San Fernando Refining Co., Socal Oil & Refining Co., St. Helens Petroleum Co., Ltd., Walter Steiner Refining Co., Triangle Oil & Refining Co., Ltd., Western Oil & Refining Co., Wilshire Oil Co., Inc., D. R. Wilson Refining Co. and Seaboard Petroleum Corp.[2]

SCHEDULE NO. 3

Gasoline Price Differentials as Between Price Schedules of Company Groups

(Pursuant to Provisions of Section 4, Paragraph 25, of Agreement)

1. Retail deliveries:

	Gasoline octane rating		
	Below 63	63 to 70	Over 70
Group A companies	Base	Base	Base
Group B companies	Base minus ½c	Base	Base
Group C companies	Base minus 1c	Base minus ½c	Base

2. Tank truck deliveries:

(a) To consumers: All companies in all groups sell at 3 cents per gallon below their respective retail prices as hereinabove determined.

(b) To dealers (see note*): All companies in all groups sell at 3 cents per gallon below their respective retail prices as hereinabove determined.

3. Truck and trailer deliveries (minimum 6,500 gallons) (see note*): All companies in all groups sell at 3¼ cents per gallon below their respective retail prices as hereinabove determined.

4. Tank car deliveries (see note*): All companies in all groups sell at 3½ cents per gallon below their respective retail prices as hereinabove determined.

*Note: On gasoline with an octane rating of 63 or over, "100 per cent dealers" to be extended an allowance of 1 cent per gallon at end of month.

[1]Distributors representing Group A companies.

[2]Distributor representing Group B companies.

Supplemental Agreement

This supplemental agreement, dated the twenty-sixth day of December, 1933, by and between the parties named in that certain agreement, copy of which is attached hereto and made a part hereof, and hereinafter referred to as the "original agreement," shall supersede said original agreement where it differs therefrom, and shall become effective when the original agreement becomes effective, and continue in force throughout the term thereof, provided that this supplemental agreement shall have been executed by all of the parties to the original agreement.

1. In the interest of definiteness, the total volume of gasoline manufactured and sold in the Pacific Coast region during the month of October, 1933, shall control the determination of the 95 per cent stipulation named in the first and third paragraphs of Section 3 of the original agreement.

2. It is expressly understood and agreed that each of the parties to this agreement shall so conduct its marketing operations in the states of Idaho, Montana, Utah and New Mexico, adjoining said Pacific Coast region, as to conform to the marketing policies and practices of the marketing companies enjoying by volume a leading marketing position in such states, and shall undertake not to demoralize the markets therein.

3. Wherever in the original agreement 63 octane is stipulated as a gasoline specification, the figure 64.9 shall apply in lieu thereof.

4. The quotas of those Group B and Group C companies subsidiary to or affiliated with Group A companies may be combined with the quotas of the supplying Group A company or companies as single quotas for the purpose of the original agreement, if mutually agreed between the parties so affiliated, and with the approval of the administrative committee.

5. It is specifically understood that inter-company sales of gasoline (i.e., sales made by any one or more of the parties to the agreement to any other one or more of the parties), shall not be subject to the penalties provided in paragraph 20 of the original agreement, nor shall they affect in any way the quotas assigned.

6. The right is reserved to those Group A companies who at the date hereof are not marketing any part of their gasoline volume on Group B or Group C price levels through subsidiaries or affiliates or under contract, to market on the same basis as do such related distributors, if and to the extent that said Group A companies find it necessary in order to market their respective quotas as defined by the original agreement, but only in that event, and for the period necessary to maintain their said respective quotas. The right is also reserved to Group B companies to market on a Group C price level when and if and to the extent that this is necessary to prevent underselling their respective quotas.

7. If, in the application of the provisions of the original agreement or this supplement, and in particular paragraph 6 hereof, Group C companies are unable to sell their quotas, the administrative committee, upon application from Group C companies affected, shall give such price relief as may be necessary to enable such underselling companies to sell their quotas, and the committee shall have power to take such action provided always that companies applying for such relief shall have diligently endeavored to maintain their sales on the normal basis.

8. The committee administering the original agreement shall have the power to act upon applications from companies for special price dispensations to meet competition of nonsigner companies, without the requirement of ratification by signers of said original agreement, and shall be required to announce decisions in all cases within 48 hours after application is received, and failing to do so, applicant shall be privileged, pending decision, to proceed to meet such competition in price. The commission's decision, when made, shall be binding upon all parties to the original agreement.

9. It is agreed by the parties hereto that top price, flat price, and other contracts that in effect extend a better price than that generally applicable to the particular class of trade involved, shall be canceled or terminated as soon as this can be legally accomplished; and, further, that no contracts of this character shall be written during the period of this supplemental agreement.

10. The prohibitions of paragraphs 9 and 13 of the original agreement relating to the construction of service stations and sales of gasoline to companies not parties to this agreement may be set aside by the administrative committee wherever in its judgment such action appears to be to the interest of the parties hereto.

11. The provision in Schedule 3, a part of the original agreement, specifying minimum of 6,500 gallons applying to price differentials for truck and trailer deliveries, shall be subject to change by the administrative committee whenever in its judgment such action appears in the interest of the parties hereto.

12. Schedule No. 1, a part of the original agreement, shall be amended as follows: The names "Seaside Oil Co.," "Sunset Pacific Oil Co.," and "Rio Grande Oil Co." shall be deleted from Group B and added to the list of companies in Group C, and the footnote reference to the Seaboard Petroleum Corp. shall be changed to read "Distributor representing Group C company."

13. The name "William P. Andrews Oil Co.," as one of the parties to the original agreement and to this supplemental agreement, shall be changed to read "Bachmann Petroleum Corp."

14. The parties hereto hereby confirm their execution of the agreement attached hereto and referred to herein as the original agreement and agree that the said agreement may be deemed to be in the form hereto attached, subject, however, to the modifications provided for in this supplemental agreement.

15. This supplemental agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, and such counterparts together shall constitute one instrument, with the same effect as if all companies executing such counterparts had executed one agreement.

TEXAS' ALLOWABLE

AUSTIN, Tex., Feb. 20.—The Texas Railroad Commission decided today after a state-wide hearing of oil operators in all fields of the state, to continue the existing production allocations indefinitely.

The aggregate allowable production on February 18 was 930,881 bbls. Requests for increased production had been made by operators in several of the fields.

CONSUMERS OIL CO.

ASHEVILLE, N. C., Feb. 19.—Consumers Oil Co., with principal office at Asheville, has filed a certificate of incorporation, to buy and sell gasoline, oils, greases and other petroleum products. W. L. Moore, C. E. Rogers, of Charlotte, N. C., and L. B. Jackson of Asheville, are officers of the company.

Drilling Methods Overcome Hazard of Charged Sands

(Continued from Page 17)

Efforts to kill or relieve the high pressures in the sands feeding the two craters have kept the Texas Co. busy since then.

View of Doheny Stone Hydril rig, showing three-cylinder vertical steam engine, and shaft-driven drawworks

The program undertaken in these efforts included the drilling of two relief wells which could serve either for the injection of mud and water into the shallow sands, or as relief wells for the blowing of the gas from the sands under control.

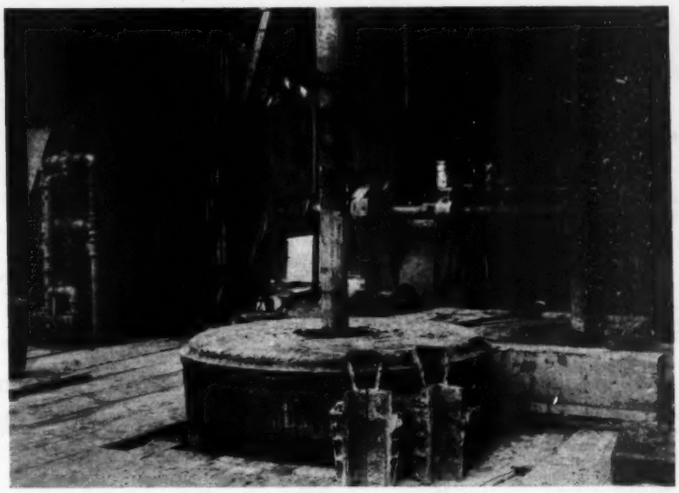
The first relief well, No. 6-A McFaddin, was located 200 feet east of No. 6 crater and started drilling in April. Drilled under pressure by means of a Sheldon-Burdon pressure head, no mishap was encountered although the well had to battle high pressures. Three strings of pipe were cemented in the hole, the first being 16-inch at 217 feet, the second 13⅜-inch at 581 feet and the other 9⅝-inch at 1,917 feet.

With bottom of the hole first at 2,011 feet, water and mud was pumped into sand at 1,987-2,010 feet for several weeks at a pressure around 800 pounds. The hole then was deepened to 2,424 feet, where pumping of water and mud was resumed, the water being injected through the drill stem at a pressure of 750 pounds, and mud through the casing at 550 pounds. Later in July the hole was deepened to another sand at 3,039-49 feet, into which mud and water also was pumped, the water into the drill stem at a pressure around 650 pounds and mud through the casing at a pressure around 355 pounds. This continued until October when the well was closed in with a pressure of around 300 to 400 pounds and the rig moved off to drill the second relief well, No. 7-A McFaddin. At this time mud is being circulated through the drill pipe and the well is being rigged up to deepen.

Second Relief Well

The second relief well was located 250 feet due north of No. 7 McFaddin, the other crater gasser. Drilling was started late in October and continued until late in November when the hole was completed at a depth of 1,597 feet. In this, 16-inch casing was cemented at 202 feet; 13⅜-inch casing at 547 feet, and a 9⅝-inch string around 1,500 feet. Pumping of mud and water into the sand began early in December and continued until recently when both crater gassers apparently became dead. The well now is standing with a pressure of 125 pounds.

How permanent have been the results obtained in this relief program cannot be predicted at this time. The situation seems to be well in hand as far as the two crater wells are concerned and if the problem of prevention of future blowouts has been solved in the drilling of No. 8 McFaddin, the Texas Co. is prepared to continue with the development of the district and the proving up of what may become a field of some importance.



View of the Doheny Stone hydraulic rotary table, with drawworks in background; also, controls to left of rotary table.

Texas Company rig on McFaddin No. 8 location at McFaddin, Texas, showing Parkersburg 122-foot steel derrick. Location is in center of a grove of giant, moss hung oaks

Vocational Training Field Problems Are Discussed

(Continued from Page 18)

is maintained at about 1,200 pounds or more, throughout the field.

The final analysis seems to be that the producer in East Texas can enjoy $1 as a posted price for his oil, produce it by natural means and continue to do so for a long period if the daily allowable for the field is held at about 400,000 bbls. This is about the proper proportion of oil to be taken from this field with relation to consumers' demand at this time and if it is maintained it will mean that other fields can produce their quota and new wells can be completed to place in reserve additional oil to balance withdrawals against underground storage.

The technical session on Thursday morning was opened with a paper by James O. Lewis, of Dunn & Lewis, engineers, Tulsa, on "Repressuring," and the paper was published in The Oil and Gas Journal of February 15. The discussion following the presentation of the paper developed many interesting points but most of them have been covered previously by other papers on this subject by Mr. Lewis, most of them having been published in The Oil and Gas Journal.

"Allocation of Production" was the title to the next paper by Fred Wood, chief petroleum engineer, Standard Oil Co. (Indiana), Chicago, Ill. Mr. Wood is the chairman of the committee dealing with this problem for the A.P.I., and spoke from notes but presented a very interesting and enlightening discussion of this very important problem. Much real progress has been made in presenting methods of dealing with the oil and gas in underground reservoirs and dividing it equitably among owners of surface rights and it is felt that the time is rapidly approaching when these theories and principles will be put to practical use.

Election of Officers

At the close of the technical session on Friday the election of officers for the Mid-Continent Section of the Petroleum Division of the A.P.I. was held and C. O. Rison, district superintendent of production for the Indian Territory Illuminating Oil Co. in the Oklahoma City Field, is the new chairman. The other officers are E. L. Bell, Deep Rock Oil Corp., Drumright, Okla., vice chairman for Oklahoma; A. S. Ritchie, Derby Oil Co., Wichita, Kans., vice chairman for Kansas, and J. A. Johnson, Continental Oil Co., Borger, Tex., vice chairman for the Texas Panhandle. John Moran, Fluid Packed Pump Co., Oklahoma City, Okla., is the new secretary-treasurer.

The advisory committee is: J. J. Conry, chairman, Carter Oil Co., Tulsa; M. J. Kirwan, vice chairman, Indian Territory Illuminating Oil Co., Bartlesville, Okla.; M. E. Wagner, Mid-Kansas Oil & Gas Co., Tulsa; Francis Yaley, Globe Oil & Refining Co., Wichita, Kans.; A. L. Derby, Derby Oil Co., Wichita, Kans.; Lloyd Pickerell, with T. C. Johnson, Wichita, Kans.; J. N. Hewgley, Slick-Urschell, Inc., Oklahoma City, Okla.; E. J. Nickles, Continental Oil Co., Ponca City, Okla.; R. K. Huey, Deep Rock Oil Corp., Tulsa; E. R. Filley, Texas Co., Tulsa; A. W. Ambrose, Empire Companies, Bartlesville, Okla.; J. J. Conry, Carter Oil Co., Tulsa; C. P. Dimit, Phillips Petroleum Co., Bartlesville, Okla.; George A. Dye, Wilcox Oil & Gas Co., Tulsa; E. J. Gorman, Twin State Oil Co., Tulsa; L. C. Hawkins, Magnolia Petroleum Co., Oklahoma City, Okla.; J. E. Holm, Atlantic Oil Producing Co., Tulsa; A. W. Leonard, Devonian Oil Co., Tulsa; W. A. Martin, Sinclair Prairie Oil Co., Tulsa; George L. Moody, Mid-Continent Petroleum Corp., Tulsa; F. M. Porter, Wirt Franklin Petroleum Corp., Oklahoma City, Okla.; R. B. Pringle, Tide Water Oil Co.; F. O. Prior, Stanolind Oil & Gas Co.; W. G. Ricketts, Amerada Petroleum Corp.; Ralph Roark, Shell Petroleum Corp.; S. G. Sanderson, Gypsy Oil Co.; H. M. Stalcup, Skelly Oil Co.; and J. D. McNutt, Pure Oil Co., all of Tulsa.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

The following quotations are exclusive of the Federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasolines

	Feb. 20		Feb. 13	
OKLAHOMA (Group 3)—				
U. S. Motor grades:				
Below 60 octane	.03½	.03⅝	.03⅞	.04⅛
60-64.9 octane	.04⅛	.04½	.04¾	.04⅞
65-70 octane	.04⅝	.04⅞	.05	.05⅛
60-62 400 grades:				
Below 60 octane	.03⅝	.03¾	.04⅛	.04¼
60-64.9 octane	.04⅝	.04⅞	.05	.05⅛
65-70 octane	.04¾	.05	.05¼	.05⅜
64-66 375	.04⅛	.04⅜	.04½	.04⅞
68-70 360	.04¾	.05	.05	.05⅛
NORTH TEXAS—				
U. S. Motor grades:				
Below 60 octane	.03½	.03⅝	.03⅞	.04
60-64.9 octane	.04⅝	.04½	.04⅝	.04⅞
65-70 octane	.04⅝	.04⅞	.04⅞	.05⅛
60-62 400	.03⅝	.03¾	.04	.04⅛
64-66 375	.04⅛	.04⅜	.04⅜	.04½
68-70 360	.04¾	.05	.04⅞	.05
NORTH LOUISIANA (Ark., No. La. & Miss. del.)—				
U. S. Motor grades:				
Below 60 octane	.04⅛		.04⅜	
60-64.9 octane	.05⅛		.05⅜	
65-70 octane	.05⅜		.05⅝	
60-62 400	.04⅛		.04½	
ARKANSAS (Ark., No. La. & Miss. del.)—				
U. S. Motor grades:				
Below 60 octane	.04½		.04⅝	
60-64.9 octane	.05⅛		.05⅜	
65-70 octane	.05⅜		.05⅝	
CHICAGO (based on Oklahoma Group 3)—				
U. S. Motor grades:				
Below 60 octane	.03½	.03¾	.04	.04⅛
60-64.9 octane	.04⅜	.04⅝	.04⅞	.05
65-70 octane	.04¾	.04⅞	.05⅛	.05⅜
60-62 400	.03⅝	.03¾	.04⅛	.04¼
64-66 375	.04½	.04¾	.04¾	.05
68-70 360	.04¾	.05	.05	.05¼
Aviation fighting grade	.05⅛	.05⅜	.05⅜	.05⅝
PENNSYLVANIA (inland refineries)—				
58-60 U. S. Motor:				
Below 60 octane	.05	.05¼	.05	.05¼
60-64.9 octane	.06⅜	.06½	.06⅜	.06½
65-70 octane	.06¾	.07¼	.06¾	.07¼
64-66 375	.06	.06⅛	.06	.06⅛
68-70 350	.06¼	.06½	.06¼	.06½
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.07	.08¼	.07	.08¼
58-60 400	.08¼	.09	.08¼	.09
EAST COAST—				
U. S. Motor, below 60 octane:				
New York	.05½	.05¾	.05½	
Baltimore	.05½	.05¾	.05½	
U. S. Motor, 60-64 octane:				
New York (Bayonne)	.05¾	.06	.05¾	
Philadelphia	.06	.06½	.05¾	.06
Boston	.06¼	.06½	.0595	.06¼
Baltimore	.05¾	.06	.05¾	
Charleston, S. C.	.05¾	.06	.05¾	
U. S. Motor, 65 and above:				
New York (Bayonne)	.06	.06¼	.06	
Philadelphia	.06¼	.06½	.06	.06¼
Boston	.06½	.0670	.0620	.06½
Baltimore	.06	.06¼	.06	
Charleston, S. C.	.06	.06¼	.06	
GULF COAST (domestic)—				
U. S. Motor:				
Below 60 octane	.04⅝	.04¾	.04⅝	.04¾
60-64.9 octane	.05	.05⅛	.05	.05⅛
65 octane and higher	.05¼	.05½	.05¼	.05½

Naphthas

	Feb. 20		Feb. 13	
PENNSYLVANIA (inland refineries)—				
50-52 430-450 (blending)	.04⅞	.05	.04⅞	.05
52-54 430-450 (blending)	.05	.05⅛	.05	.05⅛
54-56 430-450 (blending)	.05	.05⅛	.05	.05⅛
CHICAGO (based on Oklahoma Group 3)—				
50-52 450 (blending)	.03¾	.04	.04	.04¼
Cleaners' naphtha, 56-58 gr., 200 i.b.p.-330 e.p.	.06⅝	.06⅞	.06⅝	.07
Lacquer diluent, 180 i.b.p.-250 e.p.	.07⅝	.07⅞	.07⅝	.08
Lacquer diluent, 140 i.b.p.-200 e.p.	.08⅝	.08⅞	.08⅝	.09
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.06¾	.07¼	.06¾	.07
Stoddard solvent, 300 i.b.p.-410 e.p., over 83° flash	.06⅛	.06½	.06⅛	.06½
Pet. thinner, 290-300 i.b.p.-415 e.p., over 83° flash	.06¼	.06½	.06¼	.06½
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.06⅝	.07	.06⅝	.07
Petroleum spirits	.05¾	.06	.05¾	.06

Natural Gasolines

	Feb. 20		Feb. 13	
OKLAHOMA (Group 3)—				
Grade 26-70	.02½		.02¾	
Grade 18-55	.03	.03¼	.03⅜	.03½
Low vapor pressure grades:				
15 lb. v.p. (max.)	.03⅜	.03½	.03¾	.04
11 lb. v.p. (max.)	.03¾	.04	.04	.04¼
NORTH TEXAS—				
Grade 26-70	.02⅜	.02½	.02¾	
Grade 18-55	.02⅞	.03⅛	.03⅜	.03½
Low vapor pressure grades:				
15 lb. v.p. (max.)	.03¼	.03½	.03¾	.04
11 lb. v.p. (max.)	.03¾	.04	.04	.04¼
NORTH LOUISIANA—				
Grade 26-70	.02⅞	.03	.03⅛	.03¼

(Correction: In the issue of January 25 the North Louisiana price was given as 2⅜ cents. It should have been 2¾ cents.)

CALIFORNIA—				
75-85 375	.06¼	.07	.06¼	.07

Kerosenes

(All kerosenes water white)

	Feb. 20		Feb. 13	
OKLAHOMA (Group 3)—				
41-43	.03¼	.03½	.03¼	.03½
42-44	.03½	.03⅝	.03½	.03⅝
NORTH TEXAS—				
40-41	.03⅛	.03¼	.03⅛	.03¼
41-43	.03¼	.03⅜	.03¼	.03⅜
NORTH LOUISIANA (Ark., No. La. & Miss. del.)—				
41-43	.03¾		.03¾	
42-44	.04		.04	
ARKANSAS (Ark., No. La. & Miss. del.)—				
41-43	.03¾		.03¾	
PENNSYLVANIA (inland refineries)—				
45	.04⅜	.04⅝	.04	.04¼
46	.04⅝	.04⅞	.04¼	.04½
47	.04⅞	.05⅛	.04½	.04¾
CHICAGO (based on Oklahoma Group 3)—				
41-43	.03¼	.03½	.03¼	.03½
42-44	.03⅜	.03½	.03⅜	.03½
CALIFORNIA (Pacific Coast consumption)—				
38-40 high burning test	.04½	.05	.04¼	.04¾
NEW YORK (Bayonne, N. J.)—				
41-43	.05¼	.05½	.05¼	.05½
GULF COAST (domestic)—				
41-43	.04½	.04⅝	.04½	.04⅝

Petroleum Coke

Prices per ton f.o.b. refineries in Chicago area. (Refineries will absorb freight to 80 cents a ton)

	Feb. 20	Feb. 13
Breeze (screenings)	5.50	5.50
Pile run	5.50	5.50
Direct from still	6.50	6.50
Lump and egg	8.00	8.00

Furnace Oils and Tractor Fuels

(Zero cold test under 190° flash and good odor)

	Feb. 20		Feb. 13	
OKLAHOMA (Group 3)—				
32-36 straw	.02⅝	.02¾	.02⅞	.03
36-38 straw	.02⅝	.02¾	.02⅝	.02⅞
38-40 straw	.02¾	.02⅞	.02⅞	.03
39-41 prime	.02⅞	.03	.03	.03⅛
NORTH TEXAS—				
38-40 straw	.02¾	.03	.02¾	.03
NORTH LOUISIANA (Ark., No. La. & Miss. del.)—				
36-40 furnace oil	.03		.03	
ARKANSAS (Ark., No. La. & Miss. del.)—				
32-36 furnace oil	.03		.03	
CHICAGO (based on Oklahoma Group 3)—				
32-36 straw	.02⅞	.03	.03	.03¼
38-40 straw	.02⅞	.03	.03	.03¼
38-40 prime white	.03	.03⅛	.03⅛	.03⅜
PENNSYLVANIA (inland refineries)—				
40-41 prime white	.04	.04⅛	.03⅞	
NEW YORK (Bayonne, N. J.)—				
36-40 (No. 1 grade)	.05¼	.05½	.05¼	.05½
32-36 (No. 2 grade)	.04½		.04½	
21 industrial (No. 4 grade)	.04		.04	

Gas Oil, Diesel Oil and Fuel Oil

(Gas oil per gallon; Diesel and fuel oils per barrel)

	Feb. 20		Feb. 13	
OKLAHOMA (Group 3)—				
32-36 gas oil cracking stock	.01⅞	.02⅛	.01⅞	.02⅛
U.G.I. gas oil	.02½		.02½	
32-36, zero to 15 gas oil	.02⅞	.03	.02⅞	.03
28-30, No. 3 burner oil	1.00	1.05	1.05	1.10
28-30, zero to 10 fuel oil	.95	1.00	.95	1.00
26-30, zero to 10 fuel oil	.85	.95	.85	.95
24-26 fuel oil	.70	.75	.70	.75
20-22 fuel oil	.57½	.65	.57½	.65
Below 16 fuel oil	.55	.60	.55	.60
NORTH TEXAS—				
32-36 gas oil, industrial	.02		.02	
22-26 fuel oil	.57½	.62½	.57½	.62½
Below 20 fuel oil	.47½	.50	.47½	.50
NORTH LOUISIANA (Ark., No. La. & Miss. del.)—				
32-36 gas oil, zero	.03		.03	
14-16 fuel oil	.65	.70	.65	.70
ARKANSAS (Ark., No. La. & Miss. del.)—				
30-32 gas oil, zero	.02¾		.02¾	
32-36 gas oil	.03		.03	
14-16 fuel oil	.65	.70	.65	.70
CHICAGO (based on Oklahoma Group 3)—				
32-36 gas oil, industrial	.01⅞	.02	.01⅞	.02
28-30 zero to 10, fuel oil	.97½	1.05	1.00	1.07½
26-28 zero to 10, fuel oil	.85	.90	.87½	.92½
22-26 zero to 10, fuel oil	.75	.80	.77½	.82½
18-22 zero to 10, fuel oil	.60	.65	.60	.65
Below 18 fuel oil	.40	.50	.40	.45

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel less in all these areas.

PENNSYLVANIA (inland refineries)—				
36-40	.03½	.03⅝	.03⅜	.03½
CALIFORNIA—				
30-34 gas oil per bbl.	1.00	1.15	1.05	1.15
27 plus Diesel	1.00	1.15	1.05	1.15
15-19 bunker (at tidewater)	.60	.70	.60	.70
15-19 (cargo lots)	.55	.60	.55	.65
15-19 (tank cars)	.45	.60	.45	.65
GULF COAST—				
28-30 gas oil	.03¾		.03¾	
28-30 Diesel (bunkers)	1.80		1.80	
Bunker C (bulk cargoes)	.92½	.95	.92½	.95
NEW YORK (Bayonne, N. J.)—				
28 plus, gas oil	.04	.04¼	.04	.04¼
28-30 Diesel (lighterage 6½ cents per bbl.)	1.95		1.95	
28-30 Diesel (tank cars)	.04½		.04½	
*Bunker C (to ocean-going ships in N. Y. harbor)	1.20		1.20	

*Lighterage charge 5 cents per barrel additional.

Neutral Oils

(Vis. at 100° F. except Pennsylvania, and color N.P.A.)

	Feb. 20		Feb. 13	
OKLAHOMA (Group 3)—				
Zero to 10 Cold Test:				
150-3	.07¾	.08	.07¾	.08
180-3	.09	.09¼	.09	.09¼
180-4	.08¾	.09	.08¾	.09
200-3	.09½	.09¾	.09½	.09¾
200-4	.09¼	.09½	.09¼	.09½
240-3	.11½	.11¾	.11½	.11¾
240-4	.11¼	.11½	.11¼	.11½
280-3	.12½	.12¾	.12½	.12¾
280-4	.12	.12¼	.12	.12¼
300-3½	.13¼	.13½	.13¼	.13½
350-3½	.14¼	.14½	.14¼	.14½
400-4	.15¼	.15½	.15¼	.15½
500-4½	.16¼	.16½	.16¼	.16½
100-2 paraffin oil	.05½	.05¾	.05½	.05¾
15-30 Cold Test:				
200-3	.08½	.08¾	.08½	.08¾
200-4	.08¼	.08½	.08¼	.08½
240-3	.10½	.10¾	.10½	.10¾
240-4	.10¼	.10½	.10¼	.10½
280-3	.11½	.11¾	.11½	.11¾
280-4	.11¼	.11½	.11¼	.11½
GULF COAST—				
Pale Oils:				
200-3	.07½		.07½	
300-3	.08	.08¼	.08	.08¼
500-3½	.09	.09¼	.09	.09¼
750-3½	.09½	.09¾	.09½	.09¾
1,200-3½	.10	.10¼	.10	.10¼
2,000-4	.10½	.10¾	.10½	.10¾
Red Oils:				
200-5-6	.06½		.06½	
300-5-6	.07	.07¼	.07	.07¼
500-5-6	.08	.08¼	.08	.08¼
750	.08½	.08¾	.08½	.08¾
1,200-5-6	.09	.09¼	.09	.09¼
2,000-6½ plus	.09½	.09¾	.09½	.09¾
CALIFORNIA—				
Pale Oils:				
100-2½-3	.23	.25	.23	.25
200-2½-3	.23	.25	.23	.25
300-3-3½	.23	.25	.23	.25
350-3-4	.23	.25	.23	.25
400-3-4	.23	.25	.23	.25

450-3-4	.23	.25	.23	.25
550-3-4	.23	.25	.23	.25
600-3-4	.23	.25	.23	.25
Red Oils:				
200-4-5	.23	.25	.23	.25
300-5-6	.23	.25	.23	.25
350-5-6	.23	.25	.23	.25
400-5-6	.23	.25	.23	.25
450-5-6	.23	.25	.23	.25
500-5-6	.23	.25	.23	.25
600-5-6½	.23	.25	.23	.25
700-6½ plus	.23	.25	.23	.25
750-6½ plus	.23	.25	.23	.25
900-6½ plus	.23	.25	.23	.25
PENNSYLVANIA—				
150 vis. at 70° F., 3 color;	400-405 flash:			
Zero pour test	.23½	.24	.23½	.24
10 pour test	.22½	.23	.22½	.23
15 pour test	.22	.22½	.22	.22½
25 pour test	.21	.21½	.21	.21½
180 vis. at 70° F., 3 color:				
25 pour test	.25	.25½	.25	.25½
200 vis. at 70° F., 3 color:				
Zero pour test	.30	.30½	.30	.30½
10 pour test	.28½	.29	.28½	.29
15 pour test	.28	.28½	.28	.28½
25 pour test	.27½	.28	.27½	.28

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	Feb. 20		Feb. 13	
630 light green	.15		.15	
600 light green S.R.	.07	.09	.07	.09
600 dark green S.R.	.05	.07	.05	.07
Bright Stocks:				
190-200 D	.26½		.26½	
150-160 D, 0-10	.23¾		.23¾	
150-160 D, 10-25	.23¼		.23¼	
150-160 D, 25-40	.22¾		.22¾	
150-160 E	.22¾		.22¾	
PENNSYLVANIA—				
600 S.R.	.18½	.19	.18½	.19
650 S.R.	.21	.21½	.21	.21½
600 Pennsylvania flash	.22	.22½	.22	.22½
630 flash	.26½	.27	.26½	.27
600 Warren E filtered	.21½	.22	.21½	.22
Pennsylvania Grade bright stock:				
No. 8 color, 145-50 at 210;	540-550 flash:			
10 pour test	.29	.29½	.29	.29½
15 pour test	.28½	.29	.28½	.29
20 pour test	.28	.28½	.28	.28½
25 pour test	.27½	.28	.27½	.28

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	Feb. 20		Feb. 13	
124-126 white crude scale	.03¾	.03⅞	.03¾	.03⅞
PENNSYLVANIA—				
122-124	.04	.0405	.04	.0405
124-126	.0405	.0410	.0405	.0410
NEW YORK HARBOR—				
Wax (a.m.p.) in bags:				
120-122	.04425		.0430	
123-125	.04575		.0445	
125-127	.04675		.0455	
130-132	.05075		.0495	
133-135	.05675		.0555	
135-137	.05925		.0580	
124-126 crude scale	.03⅞	.04⅛	.03¾	.04
Petrolatum in barrels in carload lots:				
Dark green	.01⅞	.02	.01⅞	.02
Amber	.02⅞	.03	.02⅞	.03
Extra amber	.03⅛	.03¼	.03⅛	.03⅛
Lily white	.06¾	.06⅞	.06¾	.06⅞
Snow white	.07¾	.07⅞	.07¾	.07⅞
Cream	.05⅝	.05¾	.05⅝	.05¾
CHICAGO (f.o.b. switching district)*—				
122-124 wax	.0465	.0475	.0465	.0475
125-127 wax	.0490	.0500	.0490	.0500
127-129 wax	.0505	.0515	.0505	.0515
130-132 wax	.0565	.0575	.0565	.0575
132-134 wax	.0590	.0600	.0590	.0600

*Cents per pound on carlot orders in burlap bags of 225 lbs. approx. Add 3° F., a.m.p.

Export Prices

GASOLINE

	Feb. 20		Feb. 13	
GULF COAST—				
U. S. Motor	.04⅞	.05	.04¾	.04⅞
60-62 400	.05⅛		.05	
61-63 390	.05⅜		.05¼	
64-66 375	.05⅝	.05½	.05¼	.05⅜
LOS ANGELES, CALIF.—				
U. S. Motor grades:				
53-55 octane	.04¼	.04½	.04¼	.04½
55-65 octane	.04½	.04¾	.04½	.04¾
65-67 octane	.04¾	.05	.04¾	.05
67-69 octane	.05	.05¼	.05	.05¼
Above 69 octane	.05¼	.05¾	.05¼	.05¾
58-60 400 endpoint	.05	.05¾	.05	.05¾

KEROSENE

GULF COAST—				
41-43 prime white	.04⅛	.04¼	.04⅛	.04¼
41-43 water white	.04¼	.04⅜	.04¼	.04⅜
44 water white	.04⅜	.04½	.04⅜	.04½
LOS ANGELES, CALIF.—				
41-43 water white	.04	.04½	.04	.04½

LUBRICANTS

NEW YORK (f.a.s. in bbls.)—				
Cylinder Stocks:				
600 Warren E	.28	.29	.28	.29
600 S.R. unfiltered	.25½	.26½	.25½	.26½
650 S.R. unfiltered	.27½	.28½	.27½	.28½
600 flash S.R.	.28½	.29	.28½	.29
630 flash S.R.	.32½	.33	.32½	.33
Bright stock, 8 color	.34	.35	.34	.35
Bright stock, 6½ plus, dil.	.33	.34	.33	.34

NEUTRAL OILS

200-3 color	.33	.34	.33	.34
150-3 color	.28	.28½	.28	.28½

PARAFFIN WAX (Fully Refined)

NEW YORK (prices per pound)—				
120-122 a.m.p.	.04⅝	.04½	.04¼	.04⅝
123-125 a.m.p.	.04½	.04⅝	.04⅝	.04½
125-127 a.m.p.	.04⅝	.04¾	.04½	.04⅝
130-132 a.m.p.	.05⅛	.05¼	.05	.05⅛
133-135 a.m.p.	.05⅝	.05¾	.05½	.05⅝
135-137 a.m.p.	.05⅞	.06	.05¾	.05⅞

Crude Oil Gravity Table

Degrees gravity—	1 Oklahoma and Kansas	2 North Texas, Central Texas and East Central Texas	3 North Louisiana and Arkansas	4 Gray County, Texas	5 Carson, Hutchinson, and Moore Counties, Texas	6 Conroe, Texas	7 Salt Creek, Wyo.	8 Gulf Coast, Texas, and Louisiana	9 Gulf Coast, Texas, and Louisiana	10 Caddo, Louisiana	11 Sabine-DeSoto, Louisiana	12 Homer, Louisiana	13 Sarepta-Caterville, Louisiana	14 El Dorado, Arkansas	15 Haynesville, Louisiana	16 Miller County, Arkansas	17 Cotton Valley, Louisiana
Below 20	....	....	....	....	....	....	....	$.82	$ .82	....	....	....	....	....	....	....	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....	....	....	....	....	....	....	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....	....	....	....	....	....	....	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....	....	....	....	....	....	....	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....	....	....	....	....	....	....	....
24-24.9	....	....	....	....	....	....	....	.92	.92	....	....	....	....	....	....	....	....
Below 25	*$.76	....	....	....	....	....	....	....	....	$ .63	$ .69	$ .71	$ .75	$ .75	$ .65	$ .62	$ .70
25-25.9	*.78	....	....	....	....	....	....	.94	.94	.65	.71	.73	.77	.77	.67	.64	.72
26-26.9	*.80	....	....	....	....	....	....	.96	.96	.67	.73	.75	.79	.79	.69	.66	.74
27-27.9	*.82	....	....	....	....	....	....	.98	.98	.69	.75	.77	.81	.81	.71	.68	.76
28-28.9	*.84	....	....	....	....	....	....	1.00	1.00	.71	.77	.79	.83	.83	.73	.70	.78
Below 29	.84	$.79	$.79	....	....	....	$.84	....	....	....	....	....	....	....	....	....	....
29-29.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.73	.79	.81	.85	.85	.75	.72	.80
30-30.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.75	.81	.83	.87	.87	.77	.74	.82
31-31.9	.90	.85	.85	....	....	....	.90	1.06	1.05	.77	.83	.85	.89	.89	.79	.76	.84
32-32.9	.92	.87	.87	....	....	....	.92	1.08	1.06	.79	.85	.87	.91	.91	.81	.78	.86
33-33.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.81	.87	.89	.93	.93	.83	.80	.88
34-34.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.83	.89	.91	.95	.95	.85	.82	.90
Below 35	....	....	....	$.79	$.69	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.09	.98	1.12	1.09	.85	.91	.93	.97	.97	.87	.84	.92
36-36.9	1.00	.95	.95	.83	.73	1.11	1.00	1.12	1.10	.87	.93	.95	.99	.99	.89	.86	.94
37-37.9	1.02	.97	.97	.85	.75	1.13	1.02	1.12	1.11	.89	.95	.97	1.01	1.01	.91	.88	.96
38-38.9	1.04	.99	.99	.87	.77	1.15	1.04	1.12	1.12	.91	.97	.99	1.03	1.03	.93	.90	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	.93	.99	1.01	1.05	1.05	.95	.92	1.00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	.95	1.01	1.03	1.07	1.07	.97	.94	1.02

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedules: Below 25 degrees, 76 cents; 25-25.9 degrees, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08: Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co., and Wilcox Oil & Gas Co. All others begin their schedule at below 29 degrees, 84 cents, excepting Phillex Oil Co., which begins with below 31 degrees at 88 cents.

Column 1—Effective September 29, Texas Co. in Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas and Oklahoma; Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Phillex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; on October 1 by Barnsdall Refineries, Inc., in Oklahoma.

Column 2—Effective September 29, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective September 29, in the Van Pool, Van Zandt County, Pure Oil Co. posted below 29 degrees, 84 cents, with 2 cents added for each degree up to 40 and over at $1.08.

Column 3—Effective September 29, by Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective December 22, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 29 degrees, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03. For Standard Oil Co. of Louisiana's prices see Columns 10 to 16, inclusive.

Column 4—Effective September 29, by Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co., and H. F. Wilcox Oil & Gas Co. On same day Phillex Oil Co. posted below 31 degrees, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents.

Column 5—Effective September 29, by Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Phillex Oil Co. posted below 31 degrees, 61 cents, with 2 cents added for each degree upward to 40 and over at 81 cents.

Column 6—Effective September 29, by Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30, by Texas Co. which on September 29 had posted a schedule of $1.07 to $1.12 with a 1-cent spread on each degree.

Column 7—Effective September 29 by Stanolind Oil & Gas Co.

Column 8—Effective September 29, by Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana: 20-20.9 degrees, 84 cents, with 2 cents added for each degree upward to 34 and over at $1.12, and in Cameron Meadows and Iowa, Louisiana: Below 20 degrees, 72 cents with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 29 degrees, 70 cents, with 2 cents added for each degree upward to 34 degrees and over at $1; and in Black Bayou and White Castle, Louisiana: Below 29 degrees, 80 cents, with 2 cents added for each degree upward to 34 degrees and over at $1.10.

Column 9—Effective September 30, Texas Co. (On September 29, Texas Co. had posted a schedule 2 cents lower on each degree, but changed it on September 30.)

Columns 10, 11, 12, 13, 14, 15, 16—Effective September 29, by Standard Oil Co. of Louisiana and Louisiana Oil Refining Co.

Column 17—Effective September 29, by Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 40)

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas	$1.00
Stratman, Kans. (Sept. 29, 1933)	1.08
Corsicana (heavy) (June 17, 1933)*	.30
Other fields	(See gravity table)

Note—In East Texas, effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., and Empire Oil & Refining Co.

*Magnolia Petroleum Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933)	$ .70
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933)	.75
Pecos County, Yates shallow pool (Sept. 29, 1933)*	.65
Jones and Fisher Counties	See gravity table.

Note—Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.

*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers ..... (See gravity table)

Tomball (see note)*	$1.15
Livingston (Sept. 29, 1933)†	1.00
Cleveland (Jan. 11, 1934)	1.00
Greta (Sept. 29, 1933)	.85
Refugio, light	(See gravity table)
Refugio, heavy (Sept. 29, 1933)‡	.85
Markham and High Island	(See Gulf Coast gravity table)
Conroe	(See Conroe gravity table)

Note—Tomball, effective September 29, by Humble Oil & Refining Co., and October 2 by Magnolia Petroleum Co., and November 10 by Stanolind Oil & Gas Co.

*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy, by Humble Oil & Refining Co. Cleveland (Liberty County), posted by Magnolia Petroleum Co.

South Central and Southwest Texas

(See note below table)

Darst Creek	$.87
Mirando	.80
Luling (Sept. 29, 1933)	.75
Pettus	1.05
Salt Flat	.87
Lytton Springs (Sept. 29, 1933)	.95
Duval County (Sept. 29, 1933)	.80
Saxet	.85

Note—Effective on September 29 by Humble Oil & Refining Co. in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29, by Humble Oil & Refining Co. and Texas Co.

(Continued on Page 40)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

February 20, 1934

Taxes

The gasoline quotations given in the following tables include the 1 cent Federal tax, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third grade and a premium grade are also available.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	21.0	21.0	7.0	14.0
Augusta	21.0	21.0	7.0	14.0
Macon	21.5	21.5	7.0	14.0
Savannah	21.5	21.5	7.0	14.0
Birm'ham, Ala.	23.5	23.5	8.0	12.0
Mobile	22.5	22.5	8.0	12.5
Montgomery	21.0	21.0	8.0	14.5
Jackson, Miss.	20.5	20.5	7.0	13.0
Vicksburg	20.0	20.0	7.0	13.0
Jack'ville, Fla.	21.5	21.5	8.0	12.5
Miami	21.5	21.5	8.0	13.5
Pensacola	21.5	21.5	8.0	13.5
Tampa	21.5	21.5	8.0	12.5
Lexington, Ky.	19.0	19.0	6.0	11.0
Covington	19.5	19.5	6.0	11.0
Louisville	19.5	19.5	6.0	11.0
Paducah	18.5	18.5	6.0	10.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1 cent state tax; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1 cent city tax.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	17.0	19.0	5.0	9.5
Fort Worth	17.0	19.0	5.0	8.5
Houston	15.0	18.0	5.0	8.5
San Antonio	17.0	19.0	5.0	8.5
El Paso	17.5	19.5	6.0	11.0
Muskogee, Okla.	16.0	18.0	5.0	8.5
Okla. City	16.0	18.0	5.0	8.5
Tulsa	16.0	18.0	5.0	8.5
Ft. Smith, Ark.	14.5	16.5	7.0	8.0
Little Rock	17.1	19.1	7.0	9.0
Texarkana	15.0	17.0	5.0	8.5

Standard Oil Co. (Indiana)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Chicago	17.3	18.0	4.0	9.7
Decatur, Ill.	17.7	17.7	4.0	10.2
E. St. Louis	17.0	16.2	4.0	9.5
Joliet	17.7	17.7	4.0	10.2
Peoria	17.7	17.7	4.0	10.2
Quincy	17.5	17.5	4.0	10.0
Davenport, Ia.	17.6	17.6	4.0	10.1
Des Moines	17.6	17.6	4.0	8.0
Mason City	17.6	17.6	4.0	10.1
Sioux City	17.2	17.2	4.0	9.7
Duluth, Minn.	18.3	18.2	4.0	10.4
Mankato	17.8	17.8	4.0	10.3
Minneapolis	17.9	17.9	4.0	10.4
LaCrosse, Wis.	18.3	19.3	4.8	10.8
Green Bay	18.7	18.7	5.0	10.2
Milwaukee	18.2	18.2	5.0	9.7
Madison	18.4	18.4	5.0	9.9
Detroit, Mich.	17.5	17.5	4.0	10.5
Grand Rapids	17.7	17.7	4.0	10.2
Saginaw	18.0	18.0	4.0	10.5
Evansville, Ind.	15.5	15.5	5.0	10.0
Indianapolis	18.7	18.7	5.0	10.2
South Bend	19.0	19.0	5.0	10.5
Fargo, N. Dak.	19.6	19.6	4.0	11.1
Huron, S. Dak.	19.9	19.9	5.0	11.4
Sioux Falls	19.4	18.4	5.0	10.9
K. C., Mo.*	16.7	16.7	4.0	8.2
Springfield*	16.6	16.6	4.0	9.1
St. Louis	15.7	15.7	3.5	8.7
St. Joseph*	16.3	16.3	4.0	8.3
Wichita, Kans.	15.6	15.6	4.0	8.1
Bartlesville, Ok.	16.0	18.5	5.0	8.5

*State tax 2 cents, 1-cent city tax and 1-cent Federal tax.

Effective June 1, 1933—Discounts off tank wagon price to consumers on 500 gallons or more per month in territory outside of Chicago metropolitan area: 2 cents on Ethyl and Red Crown gasolines, and 1 cent on Stanolind gasoline. One-half cent additional discount in Chicago division.

Effective July 1, 1933—Discounts on resellers authorized agent's agreement made off the service station price throughout the territory as follows: 2.5 cents on Red Crown, Ethyl and Standard Red Crown gasolines, and 1.5 cents on Stanolind gasoline. Half of reduction from normal service station price shall be absorbed by resellers up to maximum of 1 cent on all grades.

In St. Louis and St. Louis County, Missouri, the following discounts are in force: For 300 to 1,000 gallons monthly, 2 cents on regular and premium, 1 cent on third grade; for 1,001 to 10,000 gallons, 3 cents on regular and premium, 1 cent on third grade; for more than 10,000 gallons, 3½ cents on regular and premium, 1 cent on third grade.

Stanolex Furnace Oil in Chicago

Effective September 13, 1933, prices f.o.b. Chicago, tank wagon prices: No. 1 (36-40 lt. stw. zero), under 100 gallons, 8¼ cents; No. 2 (30-34 stw. zero), 7¾ cents; No. 3 (32-36 zero), 7¼ cents; No. 4 under 300 gallons (12-16 zero), 6¼ cents; viscosity of No. 4, 90-115 at 100° F.; No. 5 under 300 gallons, 6 cents; for deliveries of 100 gallons or more deduct 1 cent.

Naphtha

	Tank wagon
Oleum spirits	13.9
V.M.&P. naphtha	15.9
Cleaners' naphtha	15.0
Stanisol	15.0

Prices f.o.b. Chicago, September 13, 1933. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Atl'tic City, N.J.	17.0	17.0	4.0	10.0
Newark	16.8	16.3	4.0	9.5
Annapolis, Md.	18.1	17.6	5.0	10.0
Baltimore	17.6	17.1	5.0	9.0
Cumberland	19.1	18.5	5.0	12.7
Wash'g'n, D. C.	19.4	15.3	3.0	11.0
Danville, Va.	20.2	19.7	6.0	12.9
Norfolk	18.7	15.5	6.0	11.3
Petersburg	19.5	19.0	6.0	11.4
Richmond	19.1	18.6	6.0	11.7
Roanoke	20.3	19.8	6.0	12.9
Charls'n, W.Va.	18.5	18.0	5.0	12.6
Parkersburg	17.8	17.3	5.0	11.2
Wheeling	18.5	18.0	5.0	12.2
Charlotte, N. C.	21.0	21.0	7.0	13.5
Hickory	22.2	19.0	7.0	13.7
Mt. Airy	22.2	21.7	7.0	13.8
Raleigh	21.7	21.2	7.0	13.2
Salisbury	22.0	19.0	7.0	13.6
Charleston, S.C.	19.7	19.2	7.0	11.3
Columbia	21.5	21.0	7.0	13.2
Spartanburg	21.9	21.0	7.0	13.5

Note—Dealer contracts are written at 2½ cents above the posted tank car price, less a voluntary allowance of one-half cent per gallon. This affects all points. Kerosene 1 cent off tank wagon for 25 gallons or more under contract except New Jersey and Baltimore, Md.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
N. Orleans, La.	19.2	18.5	*7.0	†12.0
Baton Rouge	18.7	18.2	6.0	†12.0
Alexandria	19.6	17.5	*7.0	†10.0
Lafayette	19.8	16.9	*7.0	†12.0
Lake Charles	19.7	16.5	*7.0	†12.0
Shreveport	17.5	17.0	6.0	†12.0
Knoxville, Tenn.	23.2	22.7	8.0	13.0
Memphis	21.6	17.0	8.0	9.5
Chattanooga	23.0	22.5	8.0	12.0
Nashville	22.4	21.5	8.0	11.0
Bristol	23.5	21.0	8.0	14.0

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax.

Commercial consumers for tank wagon delivery pay following amounts over tank car price, basis yearly deliveries:

1,000 to 75,000 gallons	2.5
75,000 to 300,000 gallons	1.5
Over 300,000 gallons	1.0

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline: Tank wagon†	Gasoline: Posted retail	Gasoline: Incl'ds tax of	Kero. tank wagon
San Francisco	16.5	19.5	4.0	12.5
Los Angeles	16.0	19.0	4.0	12.5
Fresno, Calif.	15.5	18.5	4.0	14.0
Phoenix, Ariz.	18.5	21.5	6.0	‡16.0
Reno, Nev.	20.0	23.0	5.0	15.5
Portland, Ore.	19.0	22.0	5.0	13.5
Seattle, Wash.	19.0	22.0	6.0	13.5
Tacoma	19.0	22.0	6.0	13.5
Spokane	20.0	23.0	6.0	15.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4-cent per gallon discount is given dealers and mustomers taking tank wagon lots except in Phoenix where the discount is 1 cent ‡Includes 5 cents state tax.

New York and Part of New England

STANDARD OIL CO. OF NEW YORK

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	16.1	17.1	4.0	8.5
New York	16.0	17.0	4.0	8.5
Buffalo	16.7	17.7	4.0	8.0
Rochester	15.5	16.5	4.0	8.0
Syracuse	16.6	17.6	4.0	8.5
Boston, Mass.	16.0	17.0	4.0	8.0
Portland, Me.	17.2	18.2	5.0	9.0
Manch't'r, N.H.	18.2	19.2	5.0	8.5
Burlington, Vt.	18.8	19.8	5.0	9.0

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Philadelphia, Pa.	15.6	16.6	4.0	10.0
Pittsburgh	16.5	17.5	4.0	10.0
Allentown	16.5	17.5	4.0	10.0
Erie	16.5	17.5	4.0	10.0
Scranton	16.5	17.5	4.0	10.0
Altoona	16.5	17.5	4.0	10.0
Dover, Del.	16.5	17.5	4.0	10.0
Wilmington	13.5	13.5	4.0	10.0
Boston, Mass.	15.6	16.6	4.0	8.5
Springfield	16.6	17.6	4.0	8.0
Worcester	16.5	17.5	4.0	8.5
Hartford, Conn.	15.4	16.4	3.0	8.5
New Haven	15.2	16.2	3.0	8.0
Providence, R.I.	15.0	16.0	3.0	8.0

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Denver, Colo.	19.5	22.0	6.0	12.5
Pueblo	17.5	20.0	6.0	13.0
Grand Junction	21.5	24.0	6.0	15.0
Casper, Wyo.	19.0	21.5	5.0	11.5
Cheyenne	17.5	20.0	5.0	13.0
Butte, Mont.	20.5	23.0	5.0	17.5
Billings	22.5	25.0	6.0	16.5
Helena	22.0	24.5	6.0	17.5
Great Falls	22.0	24.5	6.0	17.5
Salt Lake, Utah	21.5	24.0	5.0	16.0
Boise, Idaho	22.5	25.0	6.0	18.0
Twin Falls	22.5	25.0	6.0	18.0
Albu'que, N. M.	19.0	22.0	*7.0	13.0

*One-cent city tax.

Effective October 21, 1933, discount to dealers with or without contract throughout Continental territory except New Mexico as follows: Service station price less 3 cents for regular grade and 2 cents for third grade.

Canada*

IMPERIAL OIL, LTD.
Imperial 3-Star Gasoline

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Hamilton, Ont.†	26.5	27.5	6.0	17.5
Toronto, Ont.†	26.5	27.5	6.0	17.5
Brandon, Man.*	31.0	34.5	7.0	22.5
Winnipeg, Man.	28.7	31.7	7.0	20.2
Regina, Sask.	29.0	32.0	6.0	21.5
Saskatoon, Sask.	31.8	34.8	6.0	24.3
Edmonton, Alta.	31.2	34.2	6.0	23.7
Calgary, Alta.	28.5	31.5	6.0	21.0
Vanc'ver, B.C.†	30.0	31.0	7.0	24.0
Montreal, Que.	24.0	27.0	6.0	17.0
St. Johns, N. B.	26.5	30.5	7.0	21.0
Halifax, N. S.	25.5	29.5	6.0	21.0

*Imperial gallon used in Canada. †Dealer discount posted tank wagon on gasoline in Ontario and British Columbia subject to dealer's discount of 3 cents per gallon.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Ohio points	16.5	17.5	5.0	*12.5

*Includes state tax of 1 cent, effective July 22.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Omaha	18.3	19.3	5.0	9.0
McCook	18.4	18.4	5.0	8.0
Norfolk	18.5	19.5	6.0	11.3
North Platte	19.8	20.8	5.0	9.0
Scottsbluff	19.3	19.3	5.0	11.0

Note: Discount to dealers and AAA commissions. From service station price: Red Crown Ethyl and Standard Red Crown gasoline, 3 cents. Reliance (third grade) gasoline, 2 cents. Rentals under lease and agents agreement, one-half cent per gallon additional.

Discount to consumers under contract (large consumers under contracts and governmental units): On tank wagon deliveries of gasoline on monthly purchases of 500 gallons, or yearly purchases of 6,000 gallons, from the service station price: Red Crown Ethyl and Standard Red Crown Gasoline, 2 cents per gallon; Reliance (third brand) gasoline, 1 cent per gallon.

Retail Price Changes

Regular-Grade Gasoline and Kerosene

Standard Oil Co. of New Jersey February 15 advanced the service station price of gasoline .8 cent in Newark. February 20 advanced tank wagon and service station prices of gasoline 3.3 cents in Washington.

Standard Oil Co. of Louisiana February 7 reduced the service station price of gasoline 1.6 cents in Alexandria and 1 cent in Lafayette and Lake Charles.

Atlantic Refining Co. February 9 advanced tank wagon and service station prices of gasoline one-half cent in Massachusetts, Rhode Island and Connecticut. December 3, 1933, it reduced the tank wagon price of kerosene one-half cent in Providence.

Standard Oil Co. of California February 14 reduced the tank wagon and service station prices of gasoline 1 cent in Spokane. February 15 it reduced tank wagon and service station prices of gasoline 2 cents in Fresno.

Magnolia Petroleum Co. January 30 reduced tank wagon price of kerosene 1 cent in Fort Smith.

ROCKY MOUNTAIN FIELDS

Estimated daily average production for the week ending February 17 follows:

	Bbls.
WYOMING	
Salt Creek	18,560
Big Muddy	1,650
Badger Basin	40
Byron-Garland	570
Byron-East	250
Dallas Derby	300
Dutton Creek	90
Elk Basin	530
Ferris	20
Frannie	1,370
Grass Creek	540
Greybull	10
Hamilton Dome	640
Hudson	210
LaBarge	1,210
Lance Creek	220
Lost Soldier	1,240
Mule Creek	shut in
Midway	70
Notches	shut in
Oregon Basin	shut in
Osage	840
Pilot Butte	30
Rex Lake	shut in
Rock River	1,590
South Casper	shut in
Poison Spider	100
Teapot	20
Total Wyoming	30,160
MONTANA	
Buckley-Border	180
Cat Creek	670
Cut Bank	1,240
Dry Creek	20
Kevin-Sunburst	2,400
Lake Basin	50
Pondera	530
Total Montana	5,090
COLORADO	
Florence	250
Fort Collins and Wellington	560
Ilies Domes	1,280
Moffat	520
Orchard	120
Rangely	90
Tow Creek	180
Total Colorado	3,000
NEW MEXICO	
Artesia	580
Cooper area	110
Empire area	0
Eunice area	1,080
Getty Pool	0
Hobbs	33,540
Hogback	210
Hospah	shut in
Jal	1,530
Lea area	1,880
Jackson	1,050
Maljamar	140
Rattlesnake	770
Table Mesa	90
Total New Mexico	40,980
Total all fields	79,230
Total previous week	79,140
Difference	90

NEWS FOR PETROLEUM REFINERS

S. A. Montgomery New Manager at Wood River

On March 1 S. A. Montgomery, general superintendent of the Wood River refinery of the Standard Oil Co. (Indiana) will succeed C. B. Manbeck as manager through the latter's retirement.

Mr. Manbeck joined Standard of Indiana only a few months after the company was organized. At the age of 19 he obtained a job in the Whiting refinery, then under process of construction. Showing ability, he was advanced to timekeeping, then to a clerkship and finally to assistant foreman of the can department. After serving in that department from 1890 to 1911, being in charge from 1894, he transferred to the refining side of operation as foreman of the finishing stills.

S. A. MONTGOMERY

In 1913 Mr. Manbeck went to Casper in charge of building a refinery at that point and remained to operate it as manager until 1918, when he was transferred to Wood River as manager of the refinery there.

In Wood River and Alton Mr. Manbeck has been active in business and civic life and has a wide circle of acquaintance.

DECIDE AGAINST ELECTION

The Magnolia Petroleum Co. has accepted the International Association of Oil Field, Gas Well and Refinery Workers of America as an agency for collective bargaining with refinery workers in Fort Worth.

This will make unnecessary an election authorized recently by Secretary Ickes and President Roosevelt for the workers to determine what agency would conduct negotiations with the company.

HUMBLE ADVANCES PAY

HOUSTON, Tex., Feb. 19.—Officials of Humble Oil Co. announced today that some 2,200 employes at the company's Baytown refinery on the Houston ship channel would receive a salary increase of between 4 and 5 per cent in the immediate future.

NEW JOBBING COMPANY

RALEIGH, N. C., Feb. 19. — Federal Oil & Gas Co., Inc., at Raleigh, has filed a certificate of incorporation to wholesale and retail all petroleum products. Authorized capital stock, $20,000.

EGLOFF A.I.M.E. CHAIRMAN

CHICAGO, Feb. 19. — Dr. Gustav Egloff, director of research for the Universal Oil Products Co., was made chairman of the Chicago section of A.I.M.E. at its meeting in Chicago February 16. He succeeds J. R. VanPelt, Jr., of the Museum of Science and Industry of Chicago. D. L. Colwell, metallurgist and sales manager for Stewart Die Casting Co., becomes vice chairman.

Prof. Eugene A. Stephenson of the University of Missouri addressed the meeting at the Chicago Engineers' Club. His subject was "Current Aspects of the Petroleum Industry."

WOODLEY BUYS PLANT

The Baird Refining Co. has been organized by officials of the Woodley Petroleum Co. to take over the Octane Refining Co.'s refinery at Chautauqua Switch east of Baird, the transfer taking effect February 15. The plant is operating on crude from leases owned by the Woodley Petroleum Co. and other leases nearby in Callahan County.

INDEPENDENTS ORGANIZE

N. W. Hale and J. A. Mallery have organized stations in the state of Washington under the Independent Service Stations of America and are now seeking additional members throughout all states for the purpose of effecting a large organization to formulate and support a code of fair practice among independent gasoline dealers. Offices are maintained at Seattle, Wash., in the New Orpheum Building.

WOFFORD DINNER

ROME, Ga., Feb. 17.—The Wofford Oil Co. dinner was held at the Forrest Hotel recently for approximately 45 jobbers, dealers and employes of the company in the northwestern zone.

COLLECT $100,000 MORE

GREENVILLE, S. C., Feb. 19. — Gasoline tax collections for the month of January in South Carolina showed approximately $100,000 increase over collections for the same month in 1933.

Shell Petroleum Corporation Advances R. B. High and William Mullemeister

J. F. M. Taylor, vice president in charge of manufacturing for the Shell Petroleum Corp., has formally announced the appointment of R. B. High, previously superintendent of the company's refinery at Houston, Tex., as manager of the manufacturing department with offices in St. Louis, Mo., and has named William Mullemeister to take charge of the Houston plant.

Mr. High's association with the corporation dates from 1917 when he came to the Wood River refinery from the Shell Oil Co. of California. In January, 1918, he was placed in charge of construction at Wood River, where he remained until July, 1919, when he was transferred to New Orleans, La., to build the Norco refinery. He remained there for eight years as superintnedent.

He was next appointed superintendent of the Arkansas City refinery in October, 1927, and held the same position at Wood River and Houston successively, remaining at the latter post until his recent transfer to St. Louis. He received a bachelor of science degree in mining engineering at the Univeristy of California.

Mr. Mullemeister was associated with the Shell Oil Co. on the Pacific Coast for 10 years prior to joining the Shell Petroleum Corporation in November, 1932, as cracking technologist in the manufacturing department, which position he held until his recent promotion.

Upon joining the Shell organization in 1922, Mr. Mullemeister was employed as an electrical engineer at the Wilmington, Calif., refinery during construction of that plant. Becoming interested in oil processing, he remained after operations started in the capacity of trainee. In 1925, when one of the first cracking units was built in California, he was sent to Wood River to study cracking. Since that time, he has been closely connected with all developments in cracking.

R. B. HIGH

WILLIAM MULLEMEISTER

Will "Crack Down" on All Marketers Violating Code

COLUMBUS, Ohio, Feb. 17.—The oil administration at Washington will make more drastic regulations than have been so far promulgated if necessary to carry out its plans of stabilization for the oil business, according to speakers who addressed the meetings of the annual convention of the Ohio Petroleum Marketers Association held here this week. Two of the principal speakers were B. L. Majewski, Deep Rock Oil Corp., a member of the Planning and Co-ordination Committee at Washington, and Paul Hadlick, secretary of the National Oil Marketers Association. Mr. Hadlick has served as secretary of the marketing division of the P. and C. committee and has had an important part in the interpretation of the oil industry's code provision applying to marketing operations. The convention which was attended by several hundred Ohio jobbers and representatives of the major distributors, was largely devoted to a discussion of the oil industry's code.

Mr. Hadlick explained that he and others had endeavored to secure a 6.5-spread, instead of the 6-cent spread, for jobbers, which is provided for in the new marketing forms now under consideration at Washington. He said he thought the jobbers required the additional one-half cent per gallon in order to operate profitably. The larger companies, he explained, believed the 6-cent spread was adequate. Due to the changes that have been made in the proposed contract forms Mr. Hadlick was doubtful if several of the original signers would approve the agreements, which will mean that they will not be approved by the Government. In lieu of the contract forms he predicted that the Government would attempt to control marketing with regulations similar to that issued recently in regard to consumer discounts.

If certain distributors continue to devise means to evade the provisions in regard to hours of employments in the marketing end, Mr. Majewski predicted that the maximum hours of employment would be further reduced by the Government. He pointed out that the oil industry had not increased its employment as hoped for by government representatives. The major employment of the oil industry is in the marketing end and it is to this phase of oil operations the Government is looking for the increase in employment. He asked the co-operation of the jobbers in running down violations of the labor provisions.

A.S.T.M. MEETING

"A Symposium on the Outdoor Weathering of Metals and Metallic Coatings" will be the technical feature of the 1934 A.S.T.M. regional meeting, to be held on March 7, in Washington, D. C., at the Wardman Park Hotel. The symposium wil begin at 2 p.m. and will be followed at 6:30 o'clock by a dinner at which prominent officials will speak.

Committee D-2 will meet to discuss oil testing problems.

GASOLINE FRAUD CHARGED

REGINA, Saskatchewan, Feb. 17. — Police authorities here last week visited filling and service stations operated by 10 different companies, securing samples of all gasoline sold for analysis. A charge has been laid against Canadian Oil Companies, Ltd., of fraud on the ground that supposedly different brands of gasoline sold at varying prices were all of identical grade. No charges have been laid in the other instances.

NATURAL GASOLINE MANUFACTURE

Progress Being Shown in New Turner Valley Project

CALGARY, Alberta, Feb. 17. — Further progress is being made with the organization of the Independent Gas Producers, Ltd., for the construction of a second gasoline absorption plant in the Turner Valley Field. The new company is being promoted by Minor Merriwether of Los Angeles, and is intended to handle the residual gas from independent producers who are not marketing their output to Imperial Oil, Ltd. A. H. Mayland, president of Mercury Oils, Ltd., one of the largest of the independent producers, is interested in the new project.

Royalite Oil Co. last May completed a gasoline absorption plant to handle the production of that company and other Imperial subsidiary and associate companies. The Royalite plant has been processing residual gas from some wells and the entire wet gas production from other wells where the naphtha content and pressure were too low to make the use of ordinary separators profitable. Most of these wells are in the Central Turner Valley area.

The Royalite company has an exclusive contract with the Canadian Western Natural Gas, Light, Heat & Power Co. for the marketing of the residual gas after it is processed and scrubbed. Natural gasoline from the Royalite plant is marketed to the Imperial refinery at Calgary for blending purposes; and the Imperial company is understood to be planning more extensive marketing of the naphtha to other western plants.

A number of independent companies are considering propositions for the sale of their gas to the new Independent Gas Producers, Ltd., plant. The new plant will, it is understood, be financed by the independent producers and allied interests, and the naphtha output marketed in the United States as far east as North Dakota. No potential market for the residual dry gas is in sight, though a carbon black project is being considered.

Suggestions for Settling Panhandle Gas Problem Come From Many Sources

Something must be done to stop the useless waste of gas in the Panhandle! That is a common belief but those close to actual current developments indicate that the problem is so involved that additional natural gasoline plants are as likely to be constructed there as not. The profits which accrue from operating well pressure plants of large capacity even on the present low gasoline market, will justify building if nothing is done in the next six or eight months. There are as many guessing that nothing can be done in that time as those who say something will be done.

At the present writing efforts to curtail this waste are being pushed to win a favorable decision in the Amarillo district court by proving that the Texas "sour gas" law is unconstitutional. Two suits have been filed, one against the Phillips Petroleum Corp. and Skelly Oil Co. jointly and the other is against the Continental Oil Co. and the Shamrock Oil & Gas Corp. jointly. In each case, it is alleged that gas is being taken from under the plaintiff's land and is being processed through the plants of these companies without payment for the gas.

Another effort will be made to repeal the "sour gas" law at the next sitting of the Texas legislature. It is questionable whether it will be as easy to swing the members to the opposing side as it was to convince them that landowners and royalty holders would receive nothing if they were not allowed to salvage the gasoline from the gas from under their holdings before it is drained away by the major pipe line transport companies.

Another solution suggested and which may be pushed to a definite end is to provide a means for these pipe line companies to take gas ratably. More pipe lines will be needed if that is the solution. Another suggestion has been that pipe line companies purchase or lease the land within the checkerboard alleged to have been carefully designed to avoid doing this very thing.

Still another proposal, and one which seems more equitable to all parties, is the restricting of gas production to oil producing wells. If this is done the gasoline production will be cut from about 21,000,000 gallons per month to about 9,000,000. It will involve shutting down about 14 plants which are now operating.

The basis for promoting this method of curtailing gas waste is justified by a higher recovery of crude oil from the sand but this in itself does not satisfy the landowner and the dry gas producer who sees his gas going over into areas off low pressure to dry out the sand belonging to a neighbor.

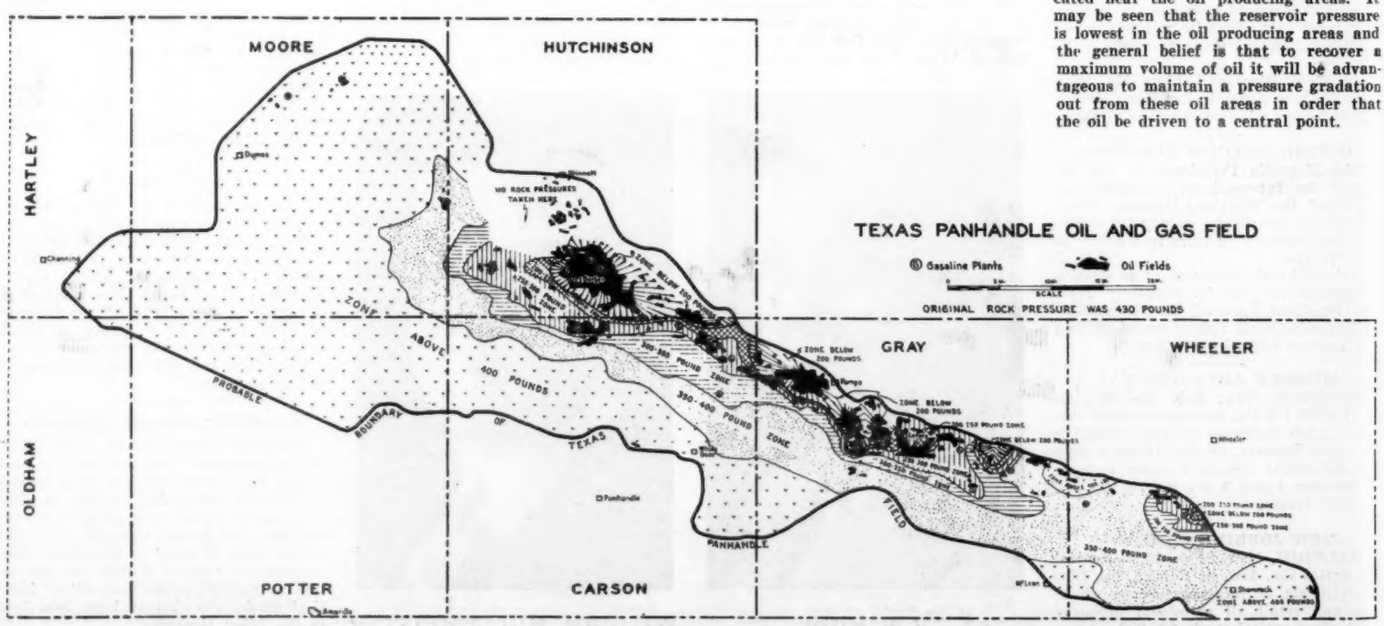
Possibly a combination of a part of these methods will bring about a higher degree of order in the operation of the Panhandle and will curtail the gross waste now practiced, but all that can be presented at present is the fact that a majority of those who are participating in this practice prefer to know what to expect over the future and to prepare for it. A majority would also welcome an order which would equitably curtail all operations.

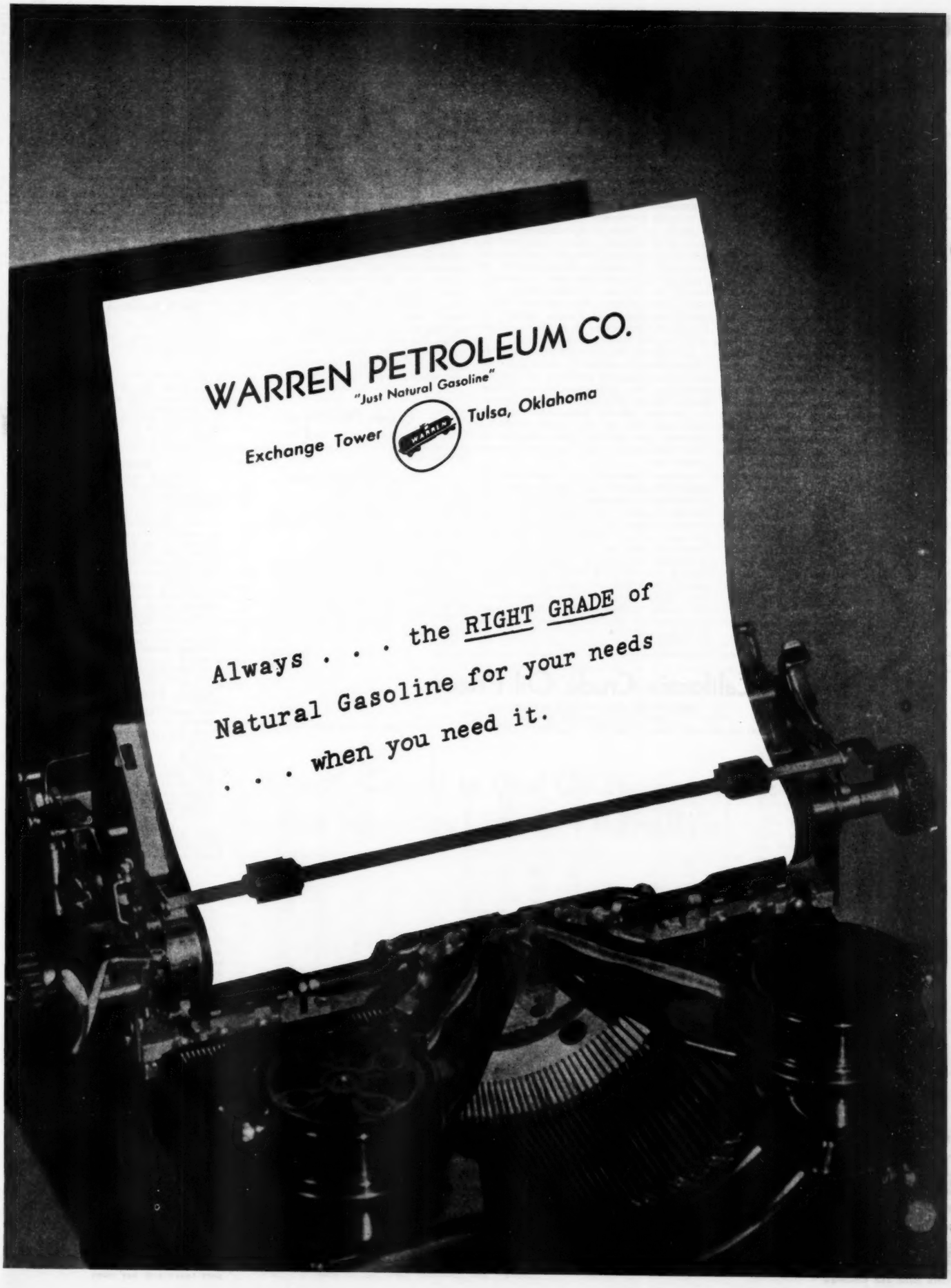
In the accompanying table, which reflects conditions during December, the 37 natural gasoline plants in the field operated at about 70 per cent of their combined capacity.

The location of each of these plants is designated on the accompanying map by the letter G in a circle. With but few exceptions, the existing plants are located near the oil producing areas. It may be seen that the reservoir pressure is lowest in the oil producing areas and the general belief is that to recover a maximum volume of oil it will be advantageous to maintain a pressure gradation out from these oil areas in order that the oil be driven to a central point.

SUMMARY SHOWING CASINGHEAD GAS TAKEN BY PLANTS DAILY DURING DECEMBER

Company—	Plant	County	Capacity (cu.ft.)	Consumption (cu.ft.)	Gas to air (cu.ft.)
Airoiend Gaso. Corp.	No. 1	Wheeler	22,000,000	8,599,000	2,767,000
Cargray Corp.	McConnell	Carson	120,000,000	83,125,000	74,813,000
Coltexo Corp.	No. 1	Gray	60,000,000	22,896,000	.....
Coltexo Corp.	No. 3	Gray	80,000,000	28,836,000	11,071,000
Coltexo Corp.	No. 4	Gray	40,000,000	14,681,000	.....
Empire Gas & Fuel ..	Sullivan	Gray	60,000,000	15,857,000	11,911,000
F. C. Henderson, Inc...	Sanford	Hutchinson	100,000,000	93,262,000	82,192,000
Lubell, S. L.	Skellytown	Carson	10,000,000	1,148,000	398,000
Magnolia Pet. Co.	Kingsmill	Gray	30,000,000	19,813,000	18,827,000
Magnolia Pet. Co.	Lefors	Gray	30,000,000	6,855,000	2,143,000
Magnolia Pet. Co.	Magic City	Wheeler	10,000,000	4,937,000	126,000
Magnolia Pet. Co.	Skellytown	Carson	18,000,000	8,721,000	107.000
National Supply	Shamrock	Wheeler	21,000,000	14,591,000	570,000
Pacific American	No. 1	Hutchinson	70,000,000	47,862,000	11,970,000
Paramount Nat. Gaso..	Lefors	Gray	20,000,000	10,550,000	7,706.000
Phillips Pet. Co.	Bowers	Gray	40,000,000	15,914,000	.....
Phillips Pet. Co.	Gray	Gray	66,000,000	35,211,000	5,468,000
Phillips Pet. Co.	North	Gray	44,000,000	22,570,000	1,108,000
Phillips Pet. Co.	Pampa	Gray	40,000,000	26,819,000	12,000
Phillips Pet. Co.	Canadian	Hutchinson	24,000,000	14,847,000	2,173,000
Phillips Pet. Co.	Johnson	Hutchinson	50,000,000	42,184,000	6,562,000
Phillips Pet. Co.	Pancer	Carson	70,000,000	55,250,000	11,084,000
Phillips Pet. Co.	Pantex	Hutchinson	30,000,000	15,954,000	4,424,000
Phillips Pet. Co.	Rock Creek	Hutchinson	165,000,000	151,404,000	57,135,000
Phillips Pet. Co.	Sanford	Hutchinson	50,000,000	88,124,000	60,634,000
Phillips Pet. Co.	Texroy	Hutchinson	90,000,000	50,502,000	14,725,000
Shamrock O. & G. Co..	Clayton	Gray	4,000,000	1,990,000	.....
Shamrock O. & G. Co..	McKee	Moore	45,400,000	47,875,000	46,148,000
Shell Pet. Corp.	W. Bryan No. 2	Carson	15,000,000	9,256,000	3,736,000
Shell Pet. Corp.	Bryan No. 17	Carson	22,500,000	23,371,000	4,863,000
Shell Pet. Corp.	Pampa No. 15	Gray	17,500,000	12,768,000	.....
Skelly Oil Co.	Armstrong	Moore	20,000,000	21,137,000	19,445,000
Skelly Oil Co.	Panhandle	Hutchinson	25,000,000	14,743,000	278,000
Skelly Oil Co.	Kingsmill	Gray	90,000,000	74,372,000	14,539,000
Sheppard, Chester A...	Pampa	Gray	30,000,000	20,996,000	3,572,000
Sunray Oil Co.	Jones	Moore	25,000,000	23,971,000	21,921,000
Wilcox Oil & Gas	No. 5	Gray	12,000,000	5,785,000	.....
Total			1,666,400,000	1,156,776,000	502,428,000




WARREN PETROLEUM CO.
"Just Natural Gasoline"
Exchange Tower
WARREN
Tulsa, Oklahoma
Always . . . the RIGHT GRADE of
Natural Gasoline for your needs
. . . when you need it.

Uncertainties of Oil Code Enforcement Weaken Chicago Gasoline Market

BY SPECIAL CORRESPONDENT

CHICAGO, Feb. 19.—Continued uncertainties over the general oil marketing situation and failure of the market to hold its own on bad news caused fresh unsettlement of the refinery gasoline price structure here, with refiners and carlot marketers pressing material for sale more actively than for some time. When it was found that few jobbers were in the market in spite of the currently good level of consumption, added momentum was given the decline. Prices at the start of the week were close to half a cent below those a week or 10 days earlier.

Urgent necessity of lightening holdings appeared to outweigh in the minds of the sellers the fact that the trade generally has been expecting early settlement of the oil marketing and pooling agreements question. In well-informed quarters there is a feeling that stabilization through these agreements is not far away. Moreover, an active campaign for additional signatures to the agreements in this territory is under way. Still, pressure has been growing to sell gasoline in the tank car market and the adverse Federal Court rulings of the last 10 days or two weeks on various phases of oil industry control have increased the nervousness previously felt by some.

Relative firmness of natural gasoline on reported Soviet buying has not stemmed the tide of refinery products' offerings. Jobbers throughout the Middle West have been receiving offers of gasoline at steadily declining prices, but it appears these jobbers have plenty of gasoline in storage, following late January buying.

All reports on volume of consumption are quite favorable, but jobbers are meeting their needs by pulling on their recently reduced storage or by placing a few orders against contracts. Certainly they are not buying very briskly in the open market. Some of them describe themselves as preferring to await the outcome of present court appeals before committing themselves to additional large-scale purchases.

While the bulk of the cheapest offerings of low-grade gasoline seem to be coming from East Texas, it is understood that sales of regular grade gasoline in tank car lots have been made to certain buyers by Chicago district interests at rather low prices. Nevertheless, third-grade material in the spot market is leading the procession in weakness. High gravities are fairly active.

Basic crude market conditions are considered here as being in comparatively good condition and statistics of refined products also are regarded as being rather well in line. While recent figures on gasoline stocks have shown larger gains than desired, the totals of stocks currently are making good comparisons with conditions a year ago, it is being pointed out.

Gasoline gallonage of representative major companies is on a basis calling for considerable optimism. Moreover, key jobbers report their business as being good in volume. On the other hand, some Chicago district dealers say there has been a falling off in recent weeks. It is certain that there is much retail price cutting. Not all of it shows up in posted prices, according to indications. Moreover, small towns of the Middle West are seeing posted prices reduced more in proportion than the larger centers, it is understood.

Kerosene seems to be anticipating March-April demand by revealing a somewhat more active interest. More refiners are now making kerosene, swinging over from distillate, and jobbers are beginning to evince more interest in it. Prices are unchanged.

Heating oils, however, are in poor demand, which of course is understandable in view of current and recent mild weather. Distributors report themselves unable to take out much more material at present. Prices have eased off perhaps a quarter cent from the top, on distillates and good gas oils. On such products as No. 3 burner oil, some sellers are quoting 10 cents a barrel below January highs. This and a straw zero gas oil are relatively firmest, however.

Fuels of ordinary cold tests, usable as cracking stock, or for some industrial purposes, and also industrial gas oil, are proving themselves more stable and more desired than the zero items. There is a good demand for 24-26 fuel at strong price levels. Also the U.G.I. gas oil is holding its own in fair demand.

With a continuation of both domestic and foreign interest in wax, various grades of the better quality are strong, and there are reports of likely price advances. The tone is good.

Crude Oil Prices

(Continued from Page 35)

Effective September 29 in Salt Flat by Shell Petroleum Corp.

Rocky Mountain States

Iles, light (Sept. 29, 1933)	$.96
Iles, heavy (Sept. 29, 1933)	.90
Florence, Colo. (June 17, 1933)	.30
Fort Collins and Wellington, Colo. (June 17)	(See Salt Creek prices)
Big Muddy (Sept. 29, 1933)	1.01
Frannie, light (Sept. 29, 1933)	.87
Frannie, heavy (Sept. 29, 1933)	.62
Salt Creek and LaBarge (Sept. 9, 1933)	See Stanolind Mid-Continent price schedule
Grass Creek, light (Sept. 29, 1933)	1.18
Grass Creek, heavy (Dec. 15, 1932)	.45
Elk Basin (Sept. 29, 1933)	1.18
Rock Creek (Sept. 29, 1933)	1.02
Dutton Creek (July 8, 1932)	See Mid-Continent gravity prices
Lance Creek (Dec. 16, 1932)	.92
Poison Spider (Mar. 5, 1931)	.70
Hudson (June 2, 1931)	.65
Lander (Mar. 5, 1931)	.40
Rex Lake (Feb. 23, 1930)	1.10
Osage (Jan. 18, 1933)	.52
Lost Soldier (Sept. 30, 1933)	.55
Hamilton Dome (Dec. 16, 1932)	.35
Torchlight (Sept. 29, 1933)	1.18
Greybull (Sept. 29, 1933)	1.18
Pondera	1.15
Sunburst (Sept. 29, 1933)	1.35
Cat Creek, Montana	1.07
Hogback (Sept. 29, 1933)	1.11
Lea County, N. Mex. (Sept. 29, 1933)	.75
Maljamar (Sept. 29, 1933)	.70
Artesia-Jackson (Dec. 1, 1932)*	.75

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, 1933, by Humble Oil & Refining Co. and other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro.

*Continental Oil Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	$.70
Tullos-Urania, La. (Jan. 13, 1934)	.87
Nevada, Ark. (Sept. 29, 1933)	.60
East El Dorado (Sept. 29, 1933)	.70
Other fields	(See gravity table)

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Nevada by Standard Oil Co. of Louisiana. Urania posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co.

Eastern States

TIDE WATER PIPE CO.
(Effective October 4, 1933)

Bradford, Pa.	$2.45
Allegany, N. Y.	2.45

SOUTH PENN OIL CO.
(Effective October 4, 1933)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$2.46
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.12
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.07
Pennsylvania Grade Oil in Buckeye Pipe Line lines (Jan. 29, 1934)	1.97
Corning Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933)	1.82

PENNZOIL CO.
(Effective October 4, 1933)

Pennsylvania Grade Oil in National Transit Lines:	
Group A (Includes Cochran, Franklin, Hamilton and Doolittle districts.	$2.37
Group B (Includes Titusville district.	2.36
Group C (Includes Turkey and Tidioute districts.	2.35
Group D (Includes Bear Creek and Porkey districts.	2.34
Group E (Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacy and Kinzua districts. Price depends on length of pipe line haul to plant at Oil City.	2.33

PURE OIL CO.
(Effective October 4, 1933)

Cabin Creek, W. Va.	$2.17
Bradford Hollow, W. Va.	2.17
Kelly Creek, W. Va.	2.17

Middle Western States

OHIO OIL CO.
(Effective September 29, 1933)

Lima	$1.30
Illinois (Jan. 5, 1934)	1.13
Princeton, Ind. (Jan. 5, 1934)	1.13
Plymouth	Shutin
Western Kentucky	1.18
Midland, Mich. (Sept. 30, 1933)*	1.02
Oceana, Mich. (Oct. 5, 1933)	.99
Somerset, Ky. (Sept. 30, 1933)	1.23
Hart County, Ky. (Oct. 1, 1932)	1.18

*Posted by Pure Oil Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted price. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Hart County, Kentucky, crude purchased by Stoll Refining Co. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Canada

Ontario (September 9, 1933):

Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (Dec. 9, 1933):†	
Clear naphtha	$3.15
Discolored naphtha	2.91
Crude oil, 50 gravity	2.66
Crude oil, 45 to 49.9	2.07
Crude oil, 40 to 44.9	1.90

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	$.73

*F.o.b. ship, based on December transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO OF CALIFORNIA
(Effective September 6, 1933)
For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier, La Habra	Montebello	Santa Fe Springs	La Habra-Coyote	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Coyote
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	....	$.65	$.65	$.65	$.65	....	$.65	$.57	$.57	$.57	$.65
15-15.9	.66	.65	.69	.69	.66	.69	....	.66	.65	.65	.65	....	.65	....	....	....	.65
16-16.9	.66	.65	.72	.73	.69	.73	....	.69	.67	.68	.65	....	.65	....	....	....	.65
17-17.9	.69	.65	.75	.76	.73	.76	....	.72	.70	.71	.65	....	.68	....	....	....	.68
18-18.9	.72	.65	.78	.80	.76	.79	....	.75	.74	.74	.65	....	.71	.61	.61	.59	.71
19-19.9	.75	.65	.81	.83	.80	.82	....	.78	.78	.78	.65	....	.74	.64	.65	.62	.74
20-20.9	.78	.68	.83	.87	.83	.85	....	.81	.82	.81	.66	....	.78	.67	.69	.65	.78
21.21-9	.81	.72	.86	.90	.87	.88	....	.83	.85	.84	.69	$.72	.81	.70	.73	.68	.81
22-22.9	.84	.76	.89	.94	.90	.92	....	.85	.89	.87	.72	.76	.84	.73	.76	.72	.84
23-23.9	.88	.81	.92	.97	.94	.95	$.83	.89	.93	.90	.76	.79	.87	.77	.79	.75	.87
24-24.9	.91	.85	.95	1.01	.97	.98	.86	.92	.97	.93	.80	.83	.90	.81	.82	.78	.90
25-25.9	.94	.89	.98	....	1.00	1.01	.90	.95	1.00	....	.85	.87	.92	.85	.85	.81	.91
26-26.9	.97	.93	1.01	....	1.04	1.04	.94	.98	1.04	....	.89	.90	.96	.89	.88	....	.96
27-27.9	1.00	.98	1.04	....	....	1.07	.97	....	1.08	....	....	.94	.99	.93	.91	....	.99
28-28.9	1.03	1.02	1.07	....	....	1.10	1.01	....	1.11	....	....	.98	1.02	.97	.94	....	1.02
29-29.9	1.06	1.05	1.09	....	....	....	1.04	....	1.15	....	....	1.01	1.05	1.01	.97	....	1.05
30-30.9	1.09	1.10	1.12	....	....	....	1.08	....	....	....	....	1.05	1.09	1.05	1.00	....	1.09
31-31.9	....	....	....	....	....	....	1.12	....	....	....	....	1.08	1.12	1.09	....	....	1.12
32-32.9	....	....	....	....	....	....	1.15	....	....	....	....	1.12	1.15	1.13	....	....	1.15
33-33.9	....	....	....	....	....	....	....	....	....	....	....	1.16	1.18	1.17	....	....	1.18
34-34.9	....	....	....	....	....	....	....	....	....	....	....	1.19	1.21	....	....	....	1.21
35-35.9	....	....	....	....	....	....	....	....	....	....	....	1.22	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	1.26	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	1.30	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.34	....	....	....	....	....

Additional Standard Oil Quotations

Elwood Terrace—F.o.b. ship, 32 degrees, $1.03; 34 degrees, $1.06; 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over 1.15.

Newhall—14 degrees and over, 57 cents.

McKittrick and Kern River—14 degrees and over, 57 cents.

Wheeler Ridge—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents; 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.

Kettleman Hills—33-33.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.02; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over, $1.11.

The Texas Co. posted in Shiells Canyon, South Mountain and Santa Paula as follows: 14 to 17.9, 57 cents; 3 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cents added for each degree up to and including 30 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 35-35.9; Richfield up to 35-35.9; Brea Canyon and Olinda up to 35-35.9, and Torrance up to 35-35.9.

Union Oil Co., effective September 6, posts same price as Standard Oil Co. in all fields in which both purchase, excepting that in Athens-Rosecrans, Union Oil Co. posts 21-21.9, 72 cents, and 33-33.9, $1.15; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 26 degrees and over; Seal Beach and Alamitos Heights, 26 degrees and over; Coyote Hills, 23 degrees and over; Richfield, 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 35 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 52 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.

Underground Warehousing of Crude Oil Reserves Assist Economic Operation of Oil Companies

By PAUL WAGNER*
Petroleum Technologist, 303 West Drew Ave., Houston, Tex.

Stabilization in the intercompany operations of a petroleum corporation must always find its groundwork in the crude oil producing branch of the industry. It is there that the basis of safe and efficient operations may be builded upon in an integrated company, to the end that effective administration reflects not merely the abilities of the executives but the qualities of the corporation as represented in its properties.

For the purpose of this paper we need not concern ourselves with the petroleum industry at large, except to say that whatever redounds to the benefit of the business generally will accrue in still greater proportion to ably managed units with built-up reserves and efficiently managed properties in the producing division.

The writer suggests that a sizeable integrated company, marketing petroleum products throughout wide areas, which can deliver its crude oil supplies to its refineries 25 cents a barrel cheaper than its competitors is in a position not only to profit immensely thereby but also to build up an enduring advantage.

Whether certain major integrated companies have ever reduced to a formula or not their programs of building up crude oil reserves, and exploiting them under the most efficient possible of conditions of "underground warehousing," the fact remains that several of them are actually working to that end.

In producing fields the systems utilized are akin to unit programs, such as the joint account operations at Van, in Van Zandt County, East Texas, and the equally efficient Yates Field proration of Pecos County, West Texas. The first mentioned is officially a unit operation; the other is an effective proration program of similar effect.

Kettleman Hills, in California, and the Hobbs Field of Lea County, southeastern New Mexico, are other examples, respectively of effective unit and proration programs that fit in generally with the type of conservative exploitation with which this paper deals. Then there are such individually owned fields as Cabin Creek, West Virginia, and Sugarland and Raccoon Bend, Texas, among others.

Benefits Directly

In the first mentioned group the diversified field ownership causes that part of an integrated company's pipe line stream to benefit directly in such proportion as its share of the field production bears to the pipe line stream as a whole. This is true also of the individually owned fields, except that under normal producing conditions the company may take into its general pipe line stream from a given field that quantity of crude oil production best suited to its own needs and without regard to competitor requirements—the only considerations to be taken into account being efficient exploitation and the conservation of reserves.

Controlled as Van, Yates, Sugarland and Cabin Creek have been, for example, they may be exploited for the greater part of their producing history on minimum recovery costs by maintaining approximately present operating conditions, recycling gas to maintain field pressures as nearly as possible, and by generally delaying the stage of high lifting costs.

In one of the Gulf coastal fields, for example, where ownership is vested in a single company, nearly all the field's ultimate yield of upwards of 80,000,000 bbls. will be recovered under flowing well conditions, because of the practice of recycling gas, maintaining field pressures and holding direct recovery costs to a few cents a barrel.

Sugarland Field

Handled as it has been, this field since its inception has never produced more than 20,000 bbls. of crude oil daily and it is now prorated at approximately 5,000 bbls. under the allocation system in force in Texas. By properly adjusting the gas injection the efficient rate of daily production can be handled in an engineering sense so as to take whatever quantity of crude may be needed from the field similarly as a cotton mill might withdraw bales of cotton from the warehouses for its looms. Storage above ground is avoided, a measurable reserve of crude oil is known to exist in the "underground warehouse" against future needs, and low cost recovery bears its percentage relationship to the delivered expense of the composite pipe line stream at the refinery.

Under the old system the field mentioned would have been exploited at something above 100,000 bbls. daily at its peak and the pressure would have been off the area in 18 months at the most, probably much sooner. When the flowing life of the field had ended the recovery cost would have approximately 60 cents a barrel thereafter; aboveground storage would have been necessarily expensive in the flush development stage, plus the carrying charge applicable to holding the oil in storage; and the "warehousing," or reserve advantages herein discussed would not exist.

The newer method contemplates the taking of the crude oil supply out of the ground as needed, relatively inexpensively, over periods of 10 to 20 years, or even longer; and the approximate reserve may be measured as a positive factor in the conduct of one's business in the future.

All of this, as set forth in the foregoing, contemplates the stabilization of intercompany operations to such an extent as the character of properties permit, and the progressive building up of the "warehouse" type of reserves so that a greater degree of stability will result in the future. Obviously, a company buying as well as producing crude oil will be able to reduce the delivered cost of its pipe line stream to the refinery in such proportion as its low cost recovery crude bears to its high cost exploitation and its purchase quantities. As a matter of accounting, the charge to the refinery may be no different than that made by a less efficient producing division to its plants, but in the final reckoning of an integrated company the profit and advantage definitely exist.

If the foregoing remarks have been mainly devoted to operating efficiencies, permit me to say that there is embraced in the background very definitely the applied economics of administration as represented in the building up of reserves and the working out of their values at the maximum of advantage.

Planning ahead can be carried on effectively as regards the effect of a specific development, not only in day-to-day and month-to-month operating programs but with relation to the future, the financing or refinancing of a company, appraisal of values for investment or otherwise.

I quote from a survey made by the writer a year and a half ago of the Pure Oil Co.'s Van Field operations in relation to its funded debt and preferred stock issues. The company owns approximately four-fifths of a proved petroleum producing area in the Woodbine sand, which the writer estimates to be capable of yielding ultimately 340,000,000 bbls. on an average per acre basis of 75,555 bbls.

The Van Field ultimate recovery estimate is purposely conservative, discounting somewhat the scientific picture of 100,000 bbls. an acre ultimate recovery, or a field final of 450,000,000 bbls. The Powell Field of the Mexia fault zone, which also produces from the Woodbine sand, has already yielded more than 40,000 bbls. an acre from only 30 feet of pay as compared with the 135 feet of producing sand averaged throughout the field at Van.

Pure's share of the Van Field, as analyzed by the writer and reproduced with permission, was set up as follows:

	Barrels
Ultimate field recovery (Paul Wagner estimate)	340,000,000
Total recovery from unitized area of field	265,200,000
Total recovery from nonunitized area of field	74,800,000
Pure's share unit area production (at 77.06%)	204,360,000
Pure's share nonunit area production	46,750,000
Pure's share in field total	251,110,000
Less Pure approximate past recovery total, including royalty oil	26,045,941
Pure's future recovery, including royalty oil	225,064,059
Value at $1 barrel of Pure's future production, including landowners' royalty	$225,064,059
Deduct future recovery cost at 20 cents barrel	45,012,811
Value after deduction	180,051,248
Less one-eighth royalty at $1 barrel	28,133,007
Ultimate value Pure's share of field	151,918,241
Discounted to present worth over period of 10 years at 7 per cent	99,104,472
Total of funded debt and preferred stock issues	64,500,000

The Van Field survey is quoted as originally made, but in an operating sense the writer knows of no reason for revision. The presence of salt water with the oil produced in some of the wells is not considered as damaging to the reserve under conditions of controlled exploitation; the field never has been produced at more than 50,000 bbls. daily for its 370 wells despite enormous potentialities. The flushing influence of the water driving the oil out ahead of it under conservative operating conditions should insure a maximum recovery ultimately.

To bring the tabulation down to date on the Van property, however, it should be taken into account that the field has produced some 16,500,000 bbls. additional oil, of which more than 13,000,000 was for the Pure's own account. Past and future production figures, and royalty amounts, need to be adjusted in their respective ratios to bring the statistics down to the first of the year. Aside from that, the Pure Oil Co.'s funded debt also has been reduced $2,000,000.

The point sought to show in the original survey, which still holds good, except for the adjustments cited, was that a single field embraced properties for the company which discounted to present worth over a period of 10 years were valued at approximately one-third more than the company's entire funded debt and preferred stock issues, notwithstanding these totaled at the time of the survey nearly $65,000,000.

*New York meeting, A.I.M.E. Petroleum Division, February, 1934.
Author's title, "A Function of Economics in the Administration of Oil Companies and Properties."

Trouble Caused in Dual Oil Strainers in East Texas Pipe Lines by Paraffin Balls

By ELTON STERRETT
Longview, Tex.

The baskets of a dual strainer on the suction lines from field storage tanks to the main line pump station in East Texas Field clogged rapidly with paraffin and cut down the oil flow to less than full displacement of the pump plungers. When the strainers were cleaned, hard balls composed of sand, paraffin and pipe scale were discovered, ranging in size from walnuts to indoor baseballs.

Because of the manner in which paraffin was forced into and through the mesh of wire screen composing the strainer baskets, the balls were suspected of contributing to the stoppage by acting as rollers, kneading the entrained sludge against the screen and thus plugging the openings.

Proof of this theory was easily obtained by dropping a few sweet gum burrs into the next basket cleaned. The burrs quickly picked up paraffin, growing to baseball size in less than eight hours. But, where earlier baskets were lined fairly uniformly from bottom to top, the one with the balls with the light burr core—floating at the top of the oil—showed a hard packed band or track of paraffin for only about the top 4 inches of mesh at the oil level.

Further experimentation developed that the balls would build up readily when only one side of the dual strainer was in use; as then the stream of entering oil was deflected at the inflow "Y" and so passed through the basket with a rotating or swirling motion.

By cracking the valve to the other

Paraffin balls compared with a 6-inch rule. These balls are as hard as apples

strainer and then closing it off during the few minutes required for the cleaning operation, formation of the balls was forestalled, and only the usual accumulation of flake and slush paraffin found in subsequent cleanings of the strainer baskets.

Development of Sucker Rods and Pull Rods Being Advanced by New Heat-Treating Installation

By R. C. CONINE

The evolution of modern sucker rods, which resist effectively the tremendous stresses of deep well operations, represents one of the high points in the science of metallurgy and reveals the resourcefulness of oil equipment engineers. Due to the limitations associated with the use of sucker rods their diameters must be small so that the additional strength required must be in the rod material itself. Due to the simplicity of the rod's design, a straight bar with upset ends, those improvements in the accuracy and design of the box and pin forgings and threads which have greatly reduced the number of failures, are particularly notable.

To estimate the progress that has been made in adapting the essentially simple sucker rod to present-day requirements, it is not necessary to hark back as far as the "second growth hickory poles joined with best wrought iron rings." In much more recent times, operators using the best iron and steel equipment available have assumed that frequent rod failures are "all in a day's work," and that the limitations on size and weight which cannot be ignored would always serve as obstacles to further improvement.

Today, the situation is entirely changed. If an oil producing company is harassed by frequent sucker rod breaks and replacements, the fault lies principally in the consumer's purchasing department. The metallurgists and sucker rod designers have not only reduced the usual failures to a minimum but are well on the way toward elimination of special troubles encountered in certain types of wells, such as hydrogen sulphide.

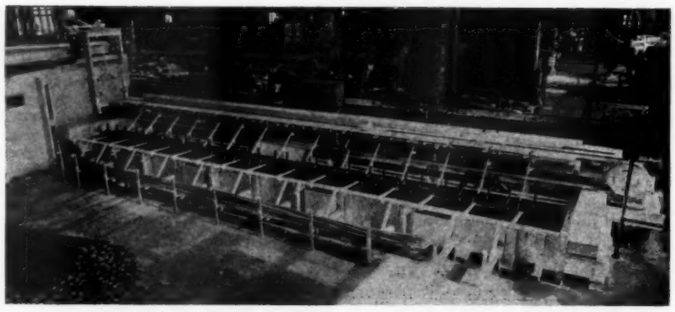
Up-to-Date System

Realizing the necessity for perfect control of all metallurgical and manufacturing processes in the production of high strength and special property sucker rods and pull rods of uniform quality from end to end, the Oil Well Supply Co. has installed and is now operating at its Imperial Works plant in Oil City, a complete and up-to-date system for the full heat treatment, straightening and proof testing of these rods.

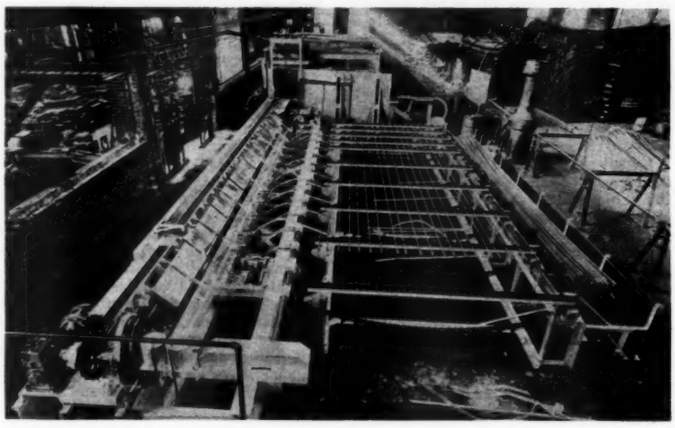
These installations which have banished cost prohibitions set up in some metallurgical researches and developments are the result of over three years of intensive work in the laboratories and shops of "Oilwell," the United States Steel Corp., and furnace specialists. Views of this heat treating equipment are shown here and these indicate how laboratory skill and control are applied on a commercial scale in the production of rods in lengths up to 30 feet. The equipment is designed to permit complete flexibility of operation and correct treatment for each steel selected. It is not necessary to adopt compromise treatments or adapt the analysis of the material to fit limited treatment facilities.

The installation consists of three units. The first is a gas-fired furnace fitted with a heat resisting alloy conveyor which carries the rods to be treated through the heated zone on a predetermined time and temperature schedule. This furnace is Brown pyrometer controlled and its temperature is continuously recorded to permit checking of 24-hour operation schedules.

The second unit is an ingenious quencher which mechanically pulls the properly heated rod from the furnace, deposits it in a jig, immerses it in a tank of circulating fluid of correct temperature, holds it there for the proper length of time, and then discharges it into a receiving cradle. Maintenance of the correct temperature in the quenching medium is controlled automatically and is checked by continuous temperature recording.



"Oilwell's" "laboratory precision control" quenching equipment



"Oilwell's" sucker rod straightening and "proof-testing" machine with heat-treating furnace in the background

The third unit is for straightening and proof-testing each rod. Any crookedness which may result from the quench is eliminated by actually stretching the rod to a straight line while it is at the draw-back or temper heat. The rod is stretched beyond its yield point while hot and plastic, thus insuring against damage to the rod or its physical properties, such as might result from cold-straightening. Defects, such as heat treatment cracks, show up in the red when thus straightened and proof-tested as the rod necks down or pulls in two at the defect. In this way each rod is tested before it goes on the conveyor type cooling bed.

A complete record of all rods is maintained. Chemical analysis of the steel soundness tests, hardness and physical properties are determined by trained observers who check the product at all times during operation of the equipment. The rods are manufactured to definite standards which are thus maintained.

Analyses of Steel

F. B. Bayless, metallurgist for the Oil Well Supply Co., is an authority on this subject, and the following interesting and instructive contribution to the lay literature is his, as is the diagrammatic representation of the methods of producing three widely different types of sucker rods:

As an example of the improvements which advanced metallurgical practices can bring about, let us examine the properties of a certain type steel rod when manufactured from exactly the same steel, upset in exactly the same way, and then given three different types of heat treatment. The steel will be plain carbon corresponding to S.A.E. 1,050 which will have the following average chemical analysis:

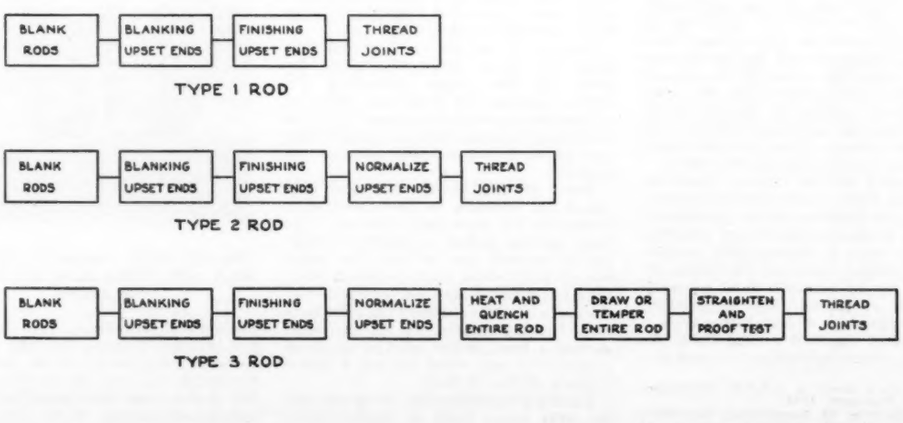
	Per cent
Carbon	0.50
Manganese	0.65
Phosphorus	0.02
Sulphur	0.04
Silicon	0.18

In producing the Type 1 rod, the ends are carefully upset (or forged) under pyrometer control and allowed to cool in air.

In producing the Type 2 rod, after the upsetting of the ends, as in Type 1, the ends from a point back beyond the zone of forging heat are given the proper normalizing treatment to regenerate the coarse grain structure resulting from the forging operation.

In producing the Type 3 rod, after the

DIAGRAM SHOWING SEQUENCE OF MAJOR OPERATIONS IN THE PRODUCTION OF THE THREE TYPES OF SUCKER RODS.



forging and normalizing operations, as listed for Types 1 and 2 rods, the entire rod is heated to its proper quenching temperature, quenched in a suitable liquid medium and then given a draw-back or toughening heat.

Under Process 1, the weakest portion of the rod is in the body just back of the upset where the high forging heat has been applied. Process 2 improves the rod but produces farther back in the body a grain structure which has the properties of the original bar after it has been given a draw-back or annealing heat. In the case of the fully or triple heat treated Type 3 rod, the best metallurgical practices have been applied and a rod is produced which is uniform from end to end and has no zones of low strength within the body. Variations in the draw-back heat will produce a wide range of strength and toughness combinations.

The accompanying table showing the properties of sucker rods made from S. A.E. 1,050 steel and given different treatments after upsetting, is self-explanatory. The properties under heading of Type 3 are those produced by a drawing temperature of 1,050° F. which gives a desirable balance between strength and toughness or ductility.

	Type 1	Type 2	Type 3
Yield point*	55,000	56,000	80,000
Ultimate strength*	90,000	95,000	115,000
Elongation in 2"	16%	20%	23%
Reduction of area	40%	40%	55%
Brinell hardness	190	195	250
Izod impact (ft.-lbs. resistance to single blow fracture)	8	18	40
Fatigue or endurance limit in air (rotating beam test)*	35,000	46,000	59,000

*Pounds per square inch.

Photomicrographs of the steel after these three types of treatment are shown to illustrate the changes in grain size and structure. All photos are at magnifications of 100 times.

Fine Grain Steel

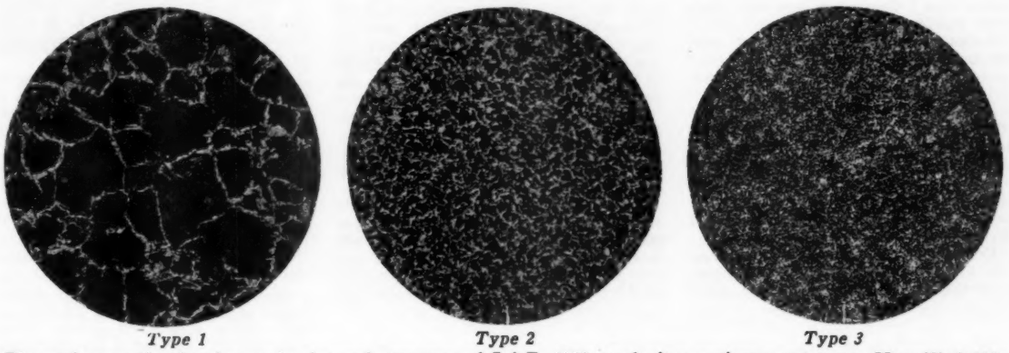
In as much as sucker rods are subjected to impact and alternating stresses, high impact and endurance properties are most desirable for rod life under conditions of high stress, consequently, it will be readily seen from this table that a full heat treatment has produced the most desirable rod. In the manufacture of "Oilwell's" fully treated carbon steel sucker rods and pull rods, a "fine grain" steel is used. Steels of this type have a normally fine grain size, respond better to heat treatment, and after treatment develop properties that are much higher than those of ordinary commercial coarse grain steels of the same chemical composition.

"Oilwell" also manufactures several types of heat treated alloy steel sucker rods and pull rods to meet special pumping conditions.

A review of the principal sucker rod developments since the pioneer oil days in western Pennsylvania is here given:

1. Wooden rods with wrought iron wing type joints.
2. Soft steel or iron rounds with forged stud ends fire welded on to form the joints.
3. Steel or iron rounds with ends upset in various ways into malleable iron joint castings.
4. Forged ends electrically welded on to the rod body.
5. The joint forging upset on the end of the rod at a temperature of 2,200° F. to 2,300° F., and air cooled, making one solid piece from end to end.
6. Changes in material composition to give greater strength. Carbon steels ranging up to 0.5 per cent carbon and alloy steels.
7. End normalizing and quenching to strengthen pins and boxes against breaks. "Oilwell" first developed the continuous end normalizing process which improved the batch method of end normalizing.
8. Improved forging designs and practices.
9. Fully normalized rods to eliminate heat treatment zones, that is, narrow zones resulting from the draw-back application and in which the condition of the steel may be characterized as "soft."
10. The fully heat treated rod, normalized, quenched and drawn, following advanced metallurgical practice.
11. Selection of metals as to elements, range of analysis and proper treatments to produce special properties.
12. Development of extra high strength sucker rods for highly stressed deep well pumping.

Research and development work, guided by sucker rod field service records, have indicated that betterments in design, material, and heat treatment were very desirable. These factors have influenced the commercial production of high strength, uniform quality, sucker rods demanding advanced heat treating facilities, such as the installation described and illustrated in this article.



Type 1 *Type 2* *Type 3*

Photomicrographs showing grain size and structure of S.A.E. 1050 steel after various treatments. Magnified 100x

Report on Testing for Antiknock Value

(Continued from Page 20)

buretor setting being that indicated by the curve to give maximum knock.

3. Contamination of sample probably accounts for several large errors. In the case of engines 10a and 10b, the large errors on sample S-3 indicate contamination, since there is no other large error with either engine, and both show the same error on that sample. The same comment applies to sample S-5 in engines 8a and 8b.

It is pertinent to note that the grand average deviation from mean is 0.70 octane number, which compares with an average deviation of 0.7 octane number experienced with a similar series of tests conducted in August, 1931, using the method of test now known as the C.F.R. research method.

Data reported show no trend in deviation from mean with either air humidity or barometric pressure. Results on engines 4a and 4b indicate altitude may have an effect on ratings, although other errors may account for these wide discrepancies from mean.

1. When A.S.T.M. knock test equipment is properly adjusted, octane numbers determined in accordance with the A.S.T.M. method differ by less than two octane numbers, and the average error is less than 0.5 octane number.

2. Errors greater than 1.0 octane number are usually caused by improper engine conditions.

Recommendations

1. The Waukesha Motor Co. is endorsed as a referee and control laboratory, and it is urged that they be consulted in cases where a persistent error in one direction is encountered.

2. It is recommended that co-operative effort be aimed at making available for general use a check fuel, sensitive to engine adjustment, reproducible, and chemically stable, to enable operators to check the condition of their equipment.

McCLANAHAN REORGANIZATION

MUSKEGON, Mich., Feb. 17.—Reorganization of the McClanahan Oil Co. as a $1,500,000 corporation headed by Walter L. McClanahan, has been approved by the State Securities Commission. Mr. McClanahan will be president, G. E. Chapman, former Dixie Oil Co. geologist, vice president and T. R. McNamara secretary-treasurer.

PENNSYLVANIA OIL MEN MEET

W. T. Holliday, president of the Standard Oil Co. of Ohio and vice president for the Division of Marketing of the American Petroleum Institute in 1932 and 1933, will be the principal speaker before the spring convention and equipment exhibit of the Pennsylvania Oil Men's Association at the Elks Hotel in Philadelphia, March 11 and 12. The program contemplates a thorough study of the code of fair competition for the petroleum industry.

NOVEL TEXACO STATION

Built entirely of porcelain, glass and steel, the first luminous service station ever to be erected on the Pacific Coast is soon to be placed at Atlantic Boulevard and State Street, Long Beach, Calif., by the Texas Co. of California.

TABLE 3

Lab. No.	Remarks	Octane numbers S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	S-10	Arithmetic average	Algebraic average
1*		+0.5	+0.1	−0.2	−0.5	+0.6	+0.7	.....	+0.8	+0.8	+0.3	0.45	+0.31
2*		+0.5	−0.7	−0.2	+0.2	+0.5	+0.4	−0.4	+0.6	−0.7	+0.9	0.51	+0.11
3		−2.3	−3.4	−0.2	+0.3	−2.0	−1.7	+1.0	−3.2	+0.3	−2.7	1.71	−1.39
4a	Engine at high altitude	−2.3	−2.4	−0.2	+0.3	−1.5	−0.7	.....	−0.8	−0.7	−1.7	1.06	−1.00
4b	Engine at low altitude	+1.7	+1.6	−0.2	+0.3	+2.0	+1.3	+1.0	+0.8	−0.7	+0.3	0.99	+0.81
5		+0.6	+0.7	+0.8	+0.7	+0.4	−0.4	−0.6	−1.0	−1.3	+1.3	0.78	+0.12
6*		+0.6	+0.4	+0.2	−0.4	+0.3	−0.3	−1.1	.....	..	+0.3	0.36	.....
7		+0.2	0	+0.3	+0.6	+1.1	+0.5	−0.4	+1.7	−0.2	+0.5	0.55	+0.43
8a	Engine No. 21	−0.7	+0.1	+0.6	+0.8	−2.4	+0.1	.....	−0.2	−1.2	+0.5	0.66	−0.24
8b	Engine No. 1	−0.5	−0.4	0	+0.3	−2.0	+0.8	.....	+0.5	−1.0	−0.1	0.56	−0.24
9*		+0.7	−0.4	+0.3	−0.5	−1.0	−0.2	.....	−0.7	−0.7	−0.7	0.52	−0.32
10a	Location A, Engine No. 1	+0.1	−0.5	−3.2	−0.4	+0.4	−1.0	.....	+0.1	−0.6	−0.3	0.66	−0.54
10b	Location A, Engine No. 3	−0.5	−0.6	−3.4	−0.3	+0.2	−0.7	+0.4	−0.2	−0.2	−0.2	0.67	−0.55
10c*	Location B	+0.1	+0.2	+0.5	−0.3	+1.0	.....	+0.3	+0.1	+0.8	−0.1	0.34	+0.26
11		+1.6	+1.4	−1.2	−0.8	−1.0	−0.4	−0.5	+1.5	−0.7	.....	0.91	−0.01
12		−1.2	+1.2	+1.0	−1.0	−1.6	−0.9	−1.2	+0.4	.....	−0.2	0.87	−0.35
13a*	Engine A	+0.5	+0.7	+0.1	+0.3	+0.6	+0.7	−0.2	+0.6	.....	+0.5	0.42	+0.38
14a*	Location A, Engine No. 1	−0.7	−0.2	−0.2	−0.1	−0.5	−0.4	−0.7	+0.1	.....	−0.2	0.31	−0.29
14b*	Location A, Engine No. 2	+0.2	+0.1	−0.4	−0.1	.....	−0.7	−1.0	+0.1	+0.5	−0.2	0.33	−0.15
14c*	Location A, Engine No. 3	−0.1	−0.2	+0.1	−0.1	−0.5	−0.4	−0.7	−0.4	+0.5	−0.2	0.32	−0.20
14d	Location B, before cleaning carbon	−2.3	−1.0	+1.3	−0.4	−2.1	−1.4	−0.4	−0.9	−0.6	−1.3	1.17	−0.91
14e	Location B, after cleaning carbon	−0.6	−1.0	+2.9	+0.5	−1.6	−2.0	−0.1	−0.7	+0.5	−0.5	1.04	−0.26
15a	Samples stored at room temperature	+0.3	+0.2	0	+0.2	+0.2	−0.1	−0.1	+1.0	−0.1	+0.3	0.25	+0.19
15b	Samples stored cold	+1.6	+1.5	+0.4	+0.2	+1.3	+0.2	+0.4	+1.5	+0.5	+0.1	0.77	+0.77
16a	Engine No. 4	+0.5	−0.7	+0.8	−0.2	−0.2	+1.1	+0.9	+0.4	+0.5	+1.0	0.63	+0.41
16b	Engine No. 2a	+0.2	−0.1	−0.3	.....	+0.8	+1.9	.....	.....	.....	+1.3	0.75	+0.62
16c	Engine No. 2b	−0.8	+0.3	.....	−0.2	.....	.....	+1.8	+0.4	+0.7	.....	0.70	+0.36
17a	Engine No. 1	−1.1	−1.9	0	.....	−1.0	+0.1	+0.2	−1.2	+0.3	−1.3	0.79	−0.66
17b	Engine No. 2	−0.6	−1.2	+0.3	.....	−0.9	+0.3	+0.4	−1.2	+0.3	−1.3	0.72	−0.43
18		+0.7	+1.6	−0.2	.....	+2.0	+0.3	.....	+1.8	+0.3	+1.3	0.91	+0.87
19a	Samples tested July 5	+1.1	+1.4	+0.7	−0.8	+1.1	+0.6	−0.4	−0.4	+0.3	+0.6	0.75	+0.42
19b	Samples tested July 7	+1.9	+1.8	+1.0	.....	+2.3	+0.4	+0.5	.....	.....	+1.1	1.12	+1.12
19c	Samples tested July 10	.....	.....	.....	−0.5	.....	.....	.....	.....	+1.1	.....	0.80	+0.30
	Average deviation	0.85	0.88	0.68	0.4	1.07	0.67	0.47	0.75	0.52	0.69	0.70	.....
	Maximum plus	1.9	1.8	2.9	0.8	2.3	1.9	1.8	1.8	1.3	1.3	....	.....
	Maximum minus	2.3	3.4	3.4	1.0	2.4	2.0	1.2	3.2	1.2	2.7	....	.....
	Spread	4.2	5.2	6.3	1.8	4.7	3.9	3.0	5.0	2.5	4.0	....	.....

Wildcat Tests for Pecos and Howard Counties; New Locations in Panhandle and North Texas

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Feb. 19.—Locations for two more wildcat tests and the drilling in of Big Lake Oil Co.'s No. 14-C University in the Big Lake Field, Reagan County, for a 624-bbl. well were important developments in the West Texas district during the week. Humble Oil & Refining Co. and the Phillips Petroleum Co. have made location for their No. 1 J. L. Nutt, a wildcat in Pecos County, in Section 16, Block 125, T. & St.L.R.R. Survey, about 12 miles southwest of the Taylor Link Pool. It will be drilled to the 2,600-foot horizon which carried a showing of oil in a test by the Phillips Petroleum, 1½ miles to the north some time ago, which was abandoned at a total depth of 4,000 feet. Humble is to have operating charge.

In Howard County, Tom N. Sloan and Frank E. Lewis of San Angelo have awarded a contract to the Richmond Drilling Co. of Texon for a 3,500-foot test, 7 miles northwest of Big Spring in Section 18, Block 31, Township 1n, T.& P.R.R. Survey. It is on the R. L. Daniel farm on a lease of 100 acres and near the center of a block of approximately 7,100 acres held by Humble, Amerada, Shell and Continental. The four companies have contributed acreage.

Reagan County

Topping the pay at 8,454 feet and drilling 5 feet in, to a total depth of 8,459 feet, Big Lake Oil Co.'s No. 14-C University flowed 624 bbls. of high gravity oil the first 24 hours with approximately 1,500,000 feet of gas. It flowed 438 bbls. the second day and 323 bbls. the third day. It is in Section 25, Block 9, and makes a minor southeast extension.

The second well to be treated with acid in this field is Big Lake Oil Co.'s No. 12-C University, an outpost completed in December for an initial production of 300 bbls. daily at a total depth of 8,857 feet. It developed water and production had declined to 100 bbls. daily on gas lift when plugged back to 8,787 feet. It is now testing after being treated with 5,000 gallons of acid under a 5,000-bbl. water load. Group No. 1 Oil Corp.'s No. 9-B University was treated with 1,000 gallons of acid a few months ago without results, and has just recently been shut down at 8,650 feet after plugging back from 8,675 feet.

Ector County

In Ector County, Humble Oil & Refining Co.'s No. 1 Martin, located in Section 38, Block 43, Township 2s, T.&P. R.R. Survey, flowed only 2½ bbls. of oil per hour after being treated with 1,000 gallons of acid, and is drilling below 3,990 feet. It is the most southern producer in the Addis area.

Broderick and Calvert's No. 1-K Cowden, an interesting wildcat in Section 16, Block 43, Township 2s, T.&P.R.R. Survey, northwest of the Addis Field, is drilling at 4,375 feet in hard lime without any change. A slight show of oil was reported from 4,048-52 feet. Gilpin and others' No. 1 Blakeney in Section 32, Block 43, Township 1n, T.&P.R.R. Survey, has been plugged back from 4,405 feet to 4,390 feet and will be treated with acid. If results are not favorable it will be shot. It showed 4 bbls. of oil and one-half barrel of water in 24 hours after plugged back.

C. J. Davidson and others will get under way this week on No. 1 Cole in Section 10, Block 45, Township 1n, T.& P.R.R. Survey, Ector County. It is in the northwestern part of the county. Several major companies have purchased protective acreage.

Upton County

Gulf Production Co.'s No. 103 McElroy, in Upton County, Section 197, Block F, C.C.S.D.&R.G.N.G. Survey, is drilling at 8,987 feet. Humble Oil & Refining Co.'s Ordovician wildcat in Pecos County, is below 7,898 feet.

In Gaines County, R. H. Gill and others' No. 1 Crews has been shut down after reaching the contract depth of 4,515 feet. It is in Section 9, Block A-20, P.S.L. Survey.

Jones County

Texas Inland Oil Co. has taken a 1,000-acre block 1 mile north of the Condor Petroleum Co.'s two producers on the Sayles and Holt farm in Jones County, which are producing from the 1,900-foot pay, and will drill a 2,000-foot test. The test will be in the northwest corner of W. Delk Survey, near Hawley.

Producers in the McMillan Pool, Runnels County, have submitted their plan of development in this high gravity, sweet oil pool, to the Planning and Co-ordination Committee. The plans limit the wells to be drilled in the proven territory to 10, not over one to 10 acres; spacing not closer than 660 feet, excepting tests already drilling or contracted, and backpressuring to conserve gas. The pool has six producers, five flowing, and one pumping. Total daily production is around 635 bbls.

PANHANDLE DISTRICT

Of the nine locations announced in the Panhandle district one was an interesting wildcat. Humble Oil & Refining Co. has made location for No. 1 B. P. Smith in Childress County, 1,327 feet from the south line and 1,327 feet from the east line of Section 27, H.&G.N. Survey, Block 9. This is the first wildcat location staked in this district for some time. The test is on a large block and will be a deep test.

Production in the Panhandle Field showed a gain of over 7,100 bbls. per day this week as a result of the recent increase in allowable of 10,000 bbls. per day. Companies and operators have been working over their wells and conditioning them for meeting their higher allowables, and the following week is expected to show a higher gain. This week's daily average was 47,305 bbls. from 1,980 wells. Sixteen wells were plugged in the Borger area of Hutchinson County.

RANGER AND WICHITA FALLS

There were nine locations staked in the Ranger district this week, eight in Shackelford and one in Eastland County. Twenty-five locations were staked in the Wichita Falls district, 12 in Archer County. Twenty-two tests were completed in the same district.

Another remarkable success was scored by acid treatment of a lime test in the Falls County School lands area of Archer County this week when Bridwell's No. 2-E Falls in the northwest corner of Block 20, swabbed 700 bbls. in 24 hours and pumped 112 bbls. in 10 hours after the solution was removed. Before the treatment in lime at 1,107-15 feet, the test had only a small showing of oil. One thousand gallons of acid solution was used.

W. B. Hamilton's No. 10 Coffield logged saturated lime from 1,240-64 feet, was treated with 1,000 gallons of acid with 100-bbl. oil load under 400 pounds pressure. It will extend lime production 3,000 feet south and 1,750 feet east of production, opening more area in the Falls County School Lands of Archer County.

C. S. Leidecker's No. 1 O. Loving in the T.E.&L. Survey No. 274, Jack County, logged oil sand from 3,218-20 feet and filled up 700 feet in three hours, later filling to the top and making one flow. It is 9,000 feet north and west of production in the Bryson Pool, which is producing from the 3,100-foot pay. It opens another area.

A 3,500-foot test is to be drilled by O. V. Beck of Nocona on a 5,000-acre block which centers in the T. R. Jackson Survey in Montague County. The location is north of three deep tests formerly drilled on the Benton lands. These tests went to 3,933, 3,535 and 3,910 feet and had good showings of oil and gas. The test is considered as having good chances for a producer.

E. J. Stumpf & Co.'s No. 1 Munger is to be a wildcat, 1,848 feet south and 1,075 feet west of the NW cor. of Section 30, but in Section 25, Kemp Wichita Valley Farm Lands Survey, Blk. 19, Wichita County. It will be drilled to 3,800 feet.

The first real shallow lime well is in process of completion in Wichita County, W. H. Hammon's No. 13 Mitchell in the John T. Lewis Survey in the west half of the county on Beaver Creek. This well was completed in February, 1932, after logging oil sand from 1,800-1,806 feet. It was drilled to 1,825 feet and produced, then plugged back to 1,807 feet to the lime during the past week and was treated with 1,000 gallons of acid with an 80-bbl. oil load under 200 pounds pressure. Before treating it was making 2 bbls. of oil and 13 bbls. of water. It is now estimated good for 75 bbls. per day.

A block of 5,500 acres has been taken 8 miles northwest of the small Thalia Pool in Foard County by B. Baker, A. V. Jones and others of Wichita Falls. A 3,500-foot test is to be sunk in Section 444, Block 9, H.&T.C. Survey, on the block. It may pick up the same pay formation as in the Thalia Pool.

Pipe line runs from the district showed

(Continued on Page 46)

Wildcat Operations in West Texas

Week Ending February 19

Company, well, farm name, section and block—	Remarks:
ANDREWS COUNTY	
Fuhrman Pet. Co.'s No. 1-B Bonner, 1,320 ft. from N line and 1,320 ft. from E line of Sec. 25, Blk. A-43, P.S.L. Sur.	Rig up.
CRANE COUNTY	
Gulf Prod. Co.'s No. 1 Edwards, 330 ft. from S line and 330 ft. from E line of Sec. 21, Blk. B-18, Public School Land Sur.	Drlg. 4,010 ft.
Storey, Frievele & Duffy's No. 1 G. L. Brown et al, 330 ft. from N and E lines of Sec. 34, Blk. 43, Twp. 4s, T.&P.R.R. Sur.	Drlg. 630 ft.
CROCKETT COUNTY	
Porter Rankin's No. 1 Todd, 1,500 ft. from N line and 3,020 ft. from E line of Sec. 68, Blk. UV, G.C.&S.F. Sur.	Drlg. 150 ft.
CULBERSON COUNTY	
Miller Bros.' No. 1 fee, 1,900 ft. from N and 660 ft. from E line of Sec. 21, Blk. 97, P.S.L. Sur.	S.D. 1,110 ft.
ECTOR COUNTY	
Atlantic Oil & Prod. Co.'s No. 1 Holt, 1,980 ft. from N line and 660 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur.	T.D. 4,320 ft.; plugged back 4,290 ft.; flowed 100 bbls. through tubing.
Atlantic Oil & Prod. Co.'s No. 2 Holt, 660 ft. from N line and 1,980 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur.	Location.
Broderick & Calvert's No. 1 Cowden, 1,980 ft. from S line and 1,980 ft. from N line of Sec. 16, Blk. 43, Twp. 2s, T.&P. Sur.	Drlg. 4,052 ft.; slight show of oil from 4,048-4,052 ft.
Continental Oil Co.'s No. 1 Holt, 660 ft. from W and 1,980 ft. from S line of Sec. 20, Blk. A, P.S.L. Sur.	T.D. 3,950 ft. (no report).
C. J. Davidson et al's No. 1 Cole, 660 ft. from N line and 660 ft. from W line of Sec. 10, Blk. 45, Twp. 1n, T.&P. Sur.	Moving in material.
Gilpen et al's No. 1 Blakeney, 330 ft. from S, 440 ft. from E line of Sec. 32, Blk. 43, Twp. 1n, T.&P. Sur.	Plugged back to 4,390 ft.; will treat with acid; T.D. 4,403 ft.
Harrison et al's No. 2 Addis, 990 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur.	Drlg. 3,836 ft.
Harrison et al's No. 3 Addis, 1,650 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur.	Location.
Humble Oil & Ref. Co.'s No. 1 Thomas J. Martin, 330 ft. from N and 440 ft. from E line of Sec. 38, Blk. 43, T.&P. Sur.	T.D. 3,986 ft.; flowed 2½ bbls. of oil per hour at 3,930 ft.
Landreth Prod. Co.'s No. 2 O. B. Holt, 660 ft. from S and E lines of Sec. 15, Blk. 43, Twp. 1n, T.&P.R.R. Sur.	Rig up.
Landreth Prod. Co. and Llano Oil Co.'s No. 2 O. B. Holt, 1,980 ft. from W and 1,980 ft. from N, Sec. 20, Blk. A, P.S.L. Sur.	Drlg. 2,907 ft.
Stanolind Oil & Gas Co.'s No. 3 E. F. Cowden, 2,275½ ft. E and 330 ft. from S line, Sec. 26, Blk. 43, Twp. 2s, T.&P.R.R. Sur.	Rig up rotary.
Stanolind Oil & Gas Co.'s No. 4 J. M. Cowden, 660 ft. from N and 1,980 ft. from E line of Sec. 27, Blk. 43, Twp. 1n, T.&P. Sur.	Drlg. 3,800 ft.
Stanolind Oil & Gas Co.'s No. 5 J. M. Cowden, 660 ft. from N and 1,980 ft. from E line of Sec. 34, Blk. 43, Twp. 1n, T.&P. Sur.	S.D. 2,105 ft.
Fred Turner, Jr.'s No. 1-C F. V. Addis, 1,650 ft. from the W line of Sec. 35, T.&P. Sur., Blk. 43, Twp. 2s	Drlg. 1,340 ft.
Fred Turner's No. 2-A Addis, 2,310 ft. from N and 440 ft. from E of Sec. 35, Blk. 43, Twp. 2s, T.&P Sur.	Cellar

(Continued on Page 47)

Anderson County Has Second Gas Discovery; Jones Test Is Looking Less Encouraging

By L. E. BREDBERG

DALLAS, Tex., Feb. 19.—The Tide Water Oil Co. and Texas Seaboard Oil Co. have made their second gas discovery in Anderson County within the six months. The former discovery, making about 50 bbls. per day, is on the Monnig (Long Lake Plantation) in the southwestern part of the county. The second discovery, so far just a gasser, is in the northwestern part of the county on the Cayuga block, several miles west of Cayuga. Both areas were worked by the Geophysical Service, Inc. under supervision of Geologists Schmidt and McFarland, respectively with the two companies.

The companies' No. 1 fee (Edens) is in the Samuel Snider Survey, on a block of some 15,000 acres, the companies having sold several edge leases and a considerable amount of royalty to companies interested, but holding the solid block intact so far as leases are concerned. The test ran high, both on Pecan and Austin chalk, but top of the Woodbine is still in question, it being reported last week at 3,842 feet. Drill stem test was first made during the week with the tools set at 3,848-3,915 feet. It was opened two minutes, the first minute the well building up 250 pounds pressure and 500 pounds in the two minutes while flowing through three-eighths inch choke. Estimated open flow of the dry gas was placed from 25,000,000 to 40,000,000 feet, some estimating it higher.

Core Testing

The sand tester was then removed and the test deepened. A core was taken from 3,951-55 feet at which time 3 feet of bentonitic shale was recovered. Eight feet was recovered in a core taken from 3,955-68 feet the first foot showing bentonitic shale, the next 5 feet sandy highly lignitic shale and the last 2 feet fine grained slightly sandy bentonitic shale with no showing of oil, gas or water. It is now coring.

Shell Petroleum Corp. and others' No. 1 Jones, in the J. F. Summeralls Survey, in the area where they drilled one dry hole and one gasser, looks less encouraging than the Beggs gasser. The Jones test between the dry hole and the gasser is shut down at 5,953 feet after a drill stem test was made from 5,935-53 feet, the well building up 950 pounds pressure when opened 10 minutes through one-quarter inch choke. The gas flow is estimated good for only about 5,000,000 feet per day, much smaller than the Beggs well.

The Beggs gasser ran higher structurally than the Jones test, and was completed at 5,850 feet after plugging back from a total depth of 6,140 feet. It is a gas well making about 125 gallons of distillate per day. Elevation is 366 feet. Elevation of the Jones test is 393 feet.

The same operators' No. 1 Lee in the William Cooper Survey, northeast of the two gassers and dry hole on the first tested structure, is drilling at 5,025 feet. Top of the Austin was logged at 4,862 feet. Elevation is 423 feet. It is running considerably lower than the dry hole about 2½ miles to the southwest but is on a different structure.

Navarro Duster

The third test of the Sayam Oil Co. in southeastern Navarro County has also proven a dry hole. It was abandoned at a total depth of 3,945 feet. Drill stem test was made at 3,900 feet showing salt water.

Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 4 Monnig, in the Simon Sanchez Survey, Long Lake area, in the southwestern part of Anderson County, cemented 9-inch casing at 2,035 feet. No. 5 Monnig, in the same survey, cemented a 12½-inch string at 223 feet. The latter is northeast of the discovery and No. 4 test is south of the discovery.

Cauble & Thompson's No. 1 Bobbett, in the Daniel Fuller Survey, Wood County wildcat, is held up by a fishing job. Total depth is 4,972 feet.

Van Zandt County

Two tests for Nacatoch sand production to the north of the Van Field, were abandoned in Van Zandt County this week, B. F. Frost and others on the S. J. Luther farm in the M. Cross Survey, and Tim Sharp and others' No. 1-A Cox in the O. C. Nugent Survey. The former went to 1,211 feet and the latter to 1,400 feet. These tests help in defining the Nacatoch sand area which so far covers but a small strip and is yielding only a small amount of oil.

EAST TEXAS

The Atlantic Oil Producing Co. is on a deal with Byrd-Frost, Inc., of Dallas, to purchase those operators' remaining interest in 187 acres. Included is the Hughey 100-acre tract with eight wells in the Outlaw Survey; the Reppond 50-acre tract with five wells in the Sanchez Survey; the Adams 11-acre tract with two producers in the Hathaway Survey, and the Stron and others 26-acre lease in the Margaret Tennyson Survey. The companies have been interested in the development of several East Texas properties, and the reported $900,000 consideration is said to include a payment due the Atlantic Oil Producing Co.

Pipe line runs averaged 418,255 bbls. for the week. Of the 59 refineries in the area, 12 are shut down and 1 is running crude tops. Runs to the plants averaged 66,455 bbls. There were no tank car shipments of crude for the week. Total daily average distribution was 484,710 bbls. while daily average production was 413,430 bbls. This shows a storage withdrawal of over 71,280 bbls. per day. Completions during the week numbered 53 and locations increased to 81.

East Central Texas Wildcats

Week Ending February 10

Company, well, farm name, section and block—	Remarks
ANDERSON COUNTY	
Byrd-Frost et al's No. 1 Alice Scott, 2,200 ft. from N and 700 ft. from E lines of Joseph Crawford Sur., 1⅛ miles NW of Slocum	Rig.
Standard of Kansas' No. 1 A. W. Johnson, 565 ft. from N line, 420 ft. from E and W lines of 22.8-ac. tract, Simon Sanches Sur.	Derrick.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 fee, 1,400 ft. from N and E lines of survey, Samuel Snider Sur.	Coring 3,855 ft.
Tide Water Oil Co.'s No. 4 Monnig, 1,866 ft. due S of No. 1 Simon Sanches Sur.	Waiting on cmt. to set; T.D. 2,055 ft.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 5 Monnig, 2,799 ft. N and 933 ft. E of No. 1, Simon Sanches Sur. No. 1	Set surface csg.; T.D. 220 ft.
BOWIE COUNTY	
R. W. Lynn and W. R. Rolfe's No. 1 Mrs. R. D. Hart, 330 ft. out of NE cor. of Hart 20-ac. tract, 1 mile E of Nash, Thomas Price Sur.	Location.
CHEROKEE COUNTY	
A. R. Lewis et al's No. 1 J. Bradford, 1,600 ft. from W line and 300 ft. from N line of 50-ac. tract, J. Laprella Sur.	Derrick.
A. F. Richardson's No. 1 P. Wood, 660 ft. from N line, 3,300 ft. from E line of 495-ac. tract, 14 miles E of Jacksonville, on Cherokee-Rusk County line, Ignacio Sanches Sur.	Derrick.
FANNIN COUNTY	
L. Kean et al's No. 1 L. M. Boyd, 900 ft. from E line and 200 ft. from N line of survey, W. Hunt Sur.	S.D. 1,310 ft.
FREESTONE COUNTY	
Clyde Creighton's No. 1 Holly Bros., 354 ft. from W and center N and S lines of lease, A.B.&M. Sur.	T.D. 5,140 ft.
GREGG COUNTY	
George Carver's No. 1 R. M. Wood, 2,250 ft. from S line and 100 ft. from W line of survey, H. R. Hokit Sur.	Rig up.
J. V. Pierce's No. 1 Tom Shaw, 3,206 ft. from N line and 3,050 ft. from W line of survey, M. V. Winkle Sur.	Drlg. 3,200 ft.
Max Rubin's No. 1 Sam Burton, 330 ft. out of NW cor. of 100-ac. lease, D. Sanches Sur.	Drlg. 1,800 ft. (no report).
HENDERSON COUNTY	
Roy Black et al's No. 1 C. B. Meredith, 360 ft. from N and W lines of 64.5-ac. tract, 4 miles SE of Malakoff, Wiley Kay Sur.	Location.
Campbell and Champlin's No. 1 R. S. Analey, 108 varas S, 623 varas W of NE cor. of lease, 6 miles SE of Buffalo, N. H. Thompson Sur.	Derrick.
HUNT COUNTY	
Meade and McKennie's No. 1 Love, 300 ft. from N line, 6,300 ft. from W line of 95-ac. tract, John Gilisky Sur.	Rig up.
KAUFMAN COUNTY	
W. J. Lewis et al's No. 1 D. Clark, 430 ft. from S line and 600 ft. from E line of survey, 6½ miles NW of Elmo	Shut down.
LAMAR COUNTY	
Cole et al's (formerly Optometrist Oil Club) No. 1 J. M. McFaddin, 450 ft. from S and W lines of E 25-ac. tract, 10 miles NW of Paris, Joseph Dick Sur.	Old well to be drilled deeper; T.D. 2,506 ft.; rig up.
LEON COUNTY	
Cooper et al's No. 1 W. H. Cozart, 1,000 ft. from SE cor. of 366-ac. tract in SW part of county, Thomas Gardner Sur.	Rig up and S.D.

(Continued on Page 47)

COMPLETIONS IN EAST TEXAS

North Gregg County

Abernathy & Kirkpatrick's No. 7 R. M. Woods, top sand 3,611 feet, initial production 100 bbls. per hour through open tubing, total depth 3,640 feet. Atlantic and Sun Oil Co.'s No. 47 Hayes, top sand 3,476 feet, initial production 115 bbls. per hour through open tubing, total depth 3,524 feet; No. 52 Hayes, top sand 3,506 feet, initial production 115 bbls. per hour through open tubing, total depth 3,548 feet. Barnsdall and Houston Oil Co.'s No. 13 J. G. McGrede, top sand 3,627 feet, initial production 105 bbls. per hour through open tubing, total depth 3,664 feet. Bishop Oil Co.'s No. 3 B. C. Todd, top sand 3,527 feet, initial production 50 bbls. in one-half hour on 1-inch choke on tubing, total depth 3,580 feet. Bond & Dillard's No. 12 J. C. Barrett, top sand 3,639 feet, initial production 45 bbls. per hour through open tubing, total depth 3,690 feet. Day & Hancock's No. 2 L. E. Jeter, top sand 3,584 feet, initial production 30 bbls. in one-half hour through open tubing, total depth 3,609 feet. F. H. E. Oil Co.'s No. 7 Christian, top sand 3,617 feet, initial production 80 bbls. per hour through open tubing, total depth 3,651 feet.

Heyser & Heard's No. 10 Gy Hindman, top sand 3,629 feet, initial production 75 bbls. per hour through open tubing, total depth 3,654 feet. Magnolia Petroleum Co.'s No. 11 Ziegler, top sand 3,472 feet, initial production 145 bbls. per hour through open tubing, total depth 3,492 feet. Selby Oil & Gas Co.'s No. 6 Annie Miller, top sand 3,562 feet, initial production 38 bbls. in one-half hour through open tubing, total depth 3,574 feet. Shasta Oil Co.'s No. 2 E. G. Richey, top sand 3,540 feet, initial production 90 bbls. per hour through open tubing, total depth 3,507 feet. Stanolind Oil & Gas Co.'s No. 4 J. B. Doby, top sand 3,515 feet, initial production 33 bbls. in one-half hour through 1-inch tubing choke, total depth 3,577 feet; No. 4-C J. Dollahite, top sand 3,644 feet, initial production 13 bbls. in one-quarter hour through three-quarters inch tubing choke, total depth 3,690 feet. Texas Co.'s No. 10 E. M. Wood, top sand 3,554 feet, initial production 85 bbls. per hour through open tubing, total depth 3,579 feet. Yount-Lee Oil Co.'s No. 6 Adrian & McCrary, top sand 3,467 feet, initial production 54 bbls. through eleven-sixteenths inch tubing choke, total depth 3,487 feet.

South Gregg County

Atlantic Oil Producing Co.'s No. 14-A S. G. Andrews, top sand 3,606 feet, initial production 60 bbls. in one-half hour through open tubing, total depth 3,622 feet. Empire Gas & Fuel Oil Co.'s No. 4 Taylor, top sand 3,683 feet, initial production 23 bbls. in one-quarter hour through open tubing, total depth 3,695 feet. Gulf Production Co.'s No. 19 Calvin Brown, top sand 3,504 feet, initial production 85 bbls. per hour through open tubing, total depth 3,519 feet. Kilgore Refining Co.'s No. 1 Archanbauch, top sand 3,569 feet, initial production 15 bbls. in one-quarter hour through open tubing, total depth 3,602 feet. Sun Oil Co.'s No. 14 M. T. Cole, top sand 3,520 feet, initial production 55 bbls. per hour through open tubing, total depth 3,544 feet; No. 28 M. T. Cole, top sand 3,521

feet, initial production 53 bbls. per hour through open tubing, total depth 3,539 feet.

North Rusk County

Devonian Oil Co.'s No. 23 R. A. Motley, top sand 3,783 feet, initial production 90 bbls. per hour through open tubing, total depth 3,788 feet. Houston Oil Co.'s No. 5 D. M. Peterson, top sand 3,647 feet, initial production 60 bbls. in

Texas Company lease in East Texas field on the banks of the Sabine River showing elevated rod line and pumper's walkway

20 minutes through open tubing, total depth 3,662 feet. Humble Oil & Refining Co.'s No. 22 J. N. Peterson, top sand 3,616 feet, initial production 85 bbls. per hour through open tubing, total depth 3,682 feet. Magnolia Petroleum Co.'s No. 11 J. C. Bradberry, top sand 3,668 feet, initial production 27 bbls. in one-quarter hour through 1-inch tubing choke, total depth 3,680 feet. Warren and others' No. 2 Hindman, top sand 3,655 feet, initial production 95 bbls. per hour through open tubing, total depth 3,667 feet. Westheimer & Daube's No. 6 D. M. Peterson, top sand 3,672 feet, initial production 33 bbls. in one-half hour through open tubing, total depth 3,714 feet.

South Rusk County

American Liberty Oil Co.'s No. 5 E. E. Thrash, top sand 3,680 feet, initial production 32 bbls. in one-quarter hour through open tubing, total depth 3,695 feet. British American Oil Co.'s No. 8 Kangerga Brothers, top sand 3,622 feet, initial production 100 bbls., total depth 3,650 feet. J. L. Collins' No. 3 Dan Kelley, top sand 3,605 feet, initial production 34 bbls. in one-half hour through open tubing, total depth 3,640 feet. Crabtree & Jeffries' No. 5 Giles, top sand 3,720 feet, initial production 62 bbls. per hour through open tubing, total depth 3,736 feet. Gant Garvin and Wegner's No. 2 J. Simmons, top sand 3,570 feet, initial production 5 bbls. per hour by heads, total depth 3,675 feet. Humble Oil & Refining Co.'s No. 22 Blackwell, top sand 3,653 feet, initial production 75 bbls. per hour through open tubing, total depth 3,667 feet; No. 27-A S. A. Plowman, top sand 3,639 feet, initial production 107 bbls. per hour through open tubing, total depth 3,667 feet.

Illinois Oil Co.'s No. 4 Florence, top sand 3,678 feet, initial production 40 bbls. in 20 minutes through open tubing, total depth 3,707 feet. Mid-Kansas Oil & Gas Co.'s No. 6 Joe Mills, top sand 3,639 feet, initial production 46 bbls. per hour through open tubing, total depth 3,731 feet. Ortiz Oil Co.'s No. 3-B Tolliver, top sand 3,675 feet, initial production 40 bbls. per hour through open tubing, total depth 3,732 feet. Sun Oil Co.'s No. 9 Herdon, top sand 3,533 feet, initial production 5 bbls. per hour pumping, total depth 3,566 feet; No. 1 Tucker, top sand 3,627 feet, initial production 36 bbls. in 20 minutes through open tubing, total depth 3,632 feet. Tide Water Oil Co.'s No. 8 M. Thompson, top sand 3,676 feet, initial production 19 bbls. in one-quarter hour through open tubing, total depth 3,718 feet.

Smith County

Gulf States Production Co.'s No. 3-A S. S. Cook, top sand 3,739 feet, initial production 82 bbls. per hour through open tubing, total depth 3,750 feet. Magnolia Petroleum Co.'s No. 7 Roy Loosier, top sand 3,698 feet, initial production 30 bbls. in one-quarter hour through three-quarters inch choke, total depth 3,703 feet. Stewart & Egan's No. 1 J. C. Bateman, top sand 3,767 feet, initial production 75 bbls. per hour through open tubing, total depth 3,768 feet. Stewart Holding Corp.'s No. 4 R. McDavid, top sand 3,763 feet, initial production 55 bbls. per hour through open tubing, total depth 3,764 feet. Sun Oil Co.'s No. 5-B A. V. Ritch, top sand 3,693 feet, initial production 35 bbls. per hour through open tubing, total depth 3,697 feet.

Upshur County

E. & D. Oil Co.'s No. 1-A J. W. Free, top sand 3,684 feet, initial production 65 bbls. per hour through open tubing, total depth 3,691 feet. Elm Oil Co.'s No. 3 E. L. Walker, top sand 3,608 feet, initial production 90 bbls. per hour through open tubing, total depth 3,632 feet. Magnolia Petroleum Co.'s No. 3 Carrie Brooks, top sand 3,656 feet, initial production 90 bbls. per hour through open tubing, total depth 3,658 feet. Phillips and Lawrence's No. 1 D. T. Floyd, top sand 3,720 feet, initial production 85 bbls. per hour through open tubing, total depth 3,731 feet. Steen Drilling Co.'s No. 7 J. F. Phillips, top sand 3,725 feet, initial production 70 bbls. per hour through open tubing, total depth 3,735 feet. Stroube & Stroube's No. 12 R. J. Mackey, top sand 3,599 feet, initial production 50 bbls. per hour through open tubing, total depth 3,605 feet. Sun Oil Co.'s No. 1-B J. A. Watkins, top sand 3,629 feet, initial production 20 bbls. per hour through open tubing, total depth 3,649 feet.

WILDCAT COMPLETIONS

Angelina County

H. C. Jennings and others' No. 1 S. E. Davidson, dry and abandoned, total depth 1,015 feet; G. Messingill Survey.

Van Zandt County

B. F. Frost and others' No. 1 S. J. Luther, dry and abandoned, total depth 1,211 feet; M. Gross Survey. Tim Sharp and others' No. 1-A Cox, dry and abandoned, total depth 1,400 feet; O. C. Nugent Survey.

PIPE LINE CONSTRUCTION

The members of the oil industry will again have the opportunity of seeing the automatic and remote controlled pipe line pump station in operation at the International Petroleum Exposition and Congress in Tulsa May 12 to 19, according to an announcement by the American Society of Mechanical Engineers who are sponsoring the exhibit.

Many improvements have been made in the automatic station since the last time it was demonstrated at the 1930 exposition. The most significant changes are in the simplication of operation.

Three separate types of operation will be demonstrated.

Station 1 is a motor-driven field gathering station used for gathering oil in the field and discharging to a field booster station, primary gathering station or main line station. The equipment in this station is manually started and shut down either manually or by a time switch. An automatic air vent is installed to remove air from the system. To provide against a closed discharge line an automatic excess pressure shutdown device is installed on the pump discharge line.

Station 2 is a motor-driven field booster station. This station receives oil from Station 1 or from field pumps and forwards it to a primary gathering station or to main line station. The pump is started and stopped by a liquid level control device, starting when the tank is about half full and shutting down when the tank is pumped down to a low point. The pump can also be started manually at the station.

Station 3 will be explained in connection with the operation of the entire system. Station 3 receives the stream from Station 2. It is assumed that this station has men on duty at all times and has tankage in which to receive stream from Station 2. The tank, flow meter and remote control equipment for shutting down Station 2 are included in the exhibit but no pumping equipment for this station will be exhibited.

Station 4 is a main line centrifugal pump booster station with remote control. This is a motor-driven station and the motor-driven valve on the pump suction line is opened or closed from the master control point or it can be operated by manual control at the station. When this valve reaches the open position the main pump motor is automatically started. Similarly, in shutting down the first movement of the valve from the open position automatically shuts down the pump.

Indications of station suction and discharge pressure conditions are given at the master control point as follows: A special automatic motor-driven throttling valve actuated by pressure changes in the main suction line operates to hold any predetermined minimum pressure on the suction line. Excess pressure and low pressure shut-down devices protect against a closed or broken discharge line. The automatic shut-down device for shutting down the unit in case of a hot bearing is illustrated by the installation on one bearing. An operating station would be so protected on all bearings. While no sump or sump pump is installed in this exhibit, a sump with automatically float controlled sump pump would be installed in this type of station.

The pump station is valued at $90,000 and work on putting it into shape will be started soon. The exhibit is located back of the Marketers and Refiners Building at the International Petroleum Exposition, Tulsa.

View of one end of the pump building and all the work tanks at the automatic pipe line pumping station at the International Petroleum Exposition, Tulsa, Oklahoma

PIPE LINE EXTENSION

MINOT, N. Dak., Feb. 17.—A project to construct a natural gas pipe line extension to cost $1,523,000, from Williston, N. Dak., to this city is before the city council. Under the present plan it will be a Federal loan proposition by the city with the Montana-Dakota Power Co., to operate and pay costs out of proceeds of gas sales.

West Texas Fields

(Continued from Page 44)

an average of 57,580 bbls. during the past week.

COMPLETIONS IN WEST TEXAS

Fisher County

Southern Oil Corp.'s No. 1-A Pardue, total depth 3,142 feet, plugged back to 3,135 feet, and shot with 130 quarts from 3,102-35 feet, and treated with acid; plugged and abandoned.

Glasscock County

Simms Oil Co.'s No. 4-A Coffee, top pay 2,092 feet, initial production 13 bbls. per hour through open tubing, total depth 2,121 feet.

Jones County

C. W. Guthrie's No. 1 Campbell, top pay 2,525 feet, treated with 500 gallons of acid, initial production 75 bbls., total depth 2,528 feet.

Loving County

Sinclair Prairie Oil Co.'s No. 1 J. G. Allen, top pay 4,289 feet, initial production 65 bbls. per day, total depth 4,301 feet.

Pecos County

Mid-Kansas Oil & Gas Co.'s No. 41-A I. G. Yates, top pay 1,200 feet, initial production 573 bbls. per hour flowing, total depth 1,410 feet.

Ward County

California Co.'s No. 3 York, top pay 2,373 feet, initial production 423 bbls. per day, total depth 2,525 feet; No. 4 York, top pay 2,368 feet, increase at 2,476-83 feet, and at 2,492-2,512 feet, initial production 385 bbls. per day flowing, total depth 2,526 feet. Gulf Production Co.'s No. 40 O'Brien, top pay 2,610 feet, initial production 1,650 bbls. in 24 hours flowing open, total depth 2,757 feet. Sturm and Simms Oil Co.'s No. 1 Jones, top pay 3,015 feet, initial production 170 bbls. of oil and estimated 15 bbls. of water, in 24 hours pumping, total depth 3,081 feet.

Winkler County

Sinclair Prairie Oil Co.'s No. 1-B Scarborough, top pay 2,835 feet, initial production 65 bbls. per day flowing, increase in oil and gas at 2,860-75 feet, total depth 2,920 feet.

COMPLETIONS IN RANGER

Brown County

S. Owens' No. 1 Whiteside, dry and abandoned, total depth 1,330 feet. Shead-Simmons-French's No. 1 Reaves, sand 1,274-82 feet, initial production 20 bbls., total depth 1,282 feet.

Callahan County

Atkinson & Sandifer's No. 1 I. N. Jackson, sand 997-1,007 feet, initial production 15 bbls., total depth 1,007 feet.

Coleman County

Otton Engle's No. 1 Carl Williams, sand 1,455-61 feet, initial production 45 bbls., total depth 1,461 feet.

Eastland County

Hoffman & Page's No. 7 J. Harbin.

sand 1,250-70 feet, shot with 120 quarts, initial production 10 bbls., total depth 1,270 feet. Hickok Development Co.'s No. 1 J. T. Stamps, pay 3,498-3,536 feet, initial production 750,000 feet of gas, total depth 3,536 feet.

Palo Pinto County

Root & Rhoades' No. 4 Costello, dry and abandoned, total depth 1,571 feet.

Shackelford County

Clay Dome Oil Co. and others' No. 1 Jeter, dry and abandoned 1,010 feet. A. C. Walker's No. 3 B. S. Walker, sand 405-10 feet, initial production 6 bbls., total depth 410 feet.

COMPLETIONS IN WICHITA FALLS

Archer County

Bridwell Oil Co.'s No. 3-E Falls, sandy lime 1,097-1,114 feet, initial production estimated 800 bbls., total depth 1,114 feet. L. T. Burns' No. 1 Coffield, dry and abandoned, total depth 1,400 feet. Fain & McGaha's No. 2 Morrison, dry and abandoned, total depth 1,420 feet; No. 16 Logan, sandy lime 1,106-12 feet, initial production 100 bbls., total depth 1,112 feet, treated with 1,000 gallons of acid. G. I. Oil Co.'s No. 1 J. J. Perkins, sandy lime 1,387-91 feet, initial production 15 bbls. of oil and 5 bbls. of water, total depth 1,391 feet, treated with acid. Golding & Cochran's No. 1-A Perkins, dry and abandoned, total depth 1,501 feet. G. I. Oil Co.'s No. 4 Perkins, lime 1,448-63 feet, initial production 75 bbls., total depth 1,463 feet, treated with acid. Golding & Cochran's No. 3 J. T. Richardson, oil sand 1,267-74 feet, initial production 28 bbls., total depth 1,294 feet. Gray Drilling Co.'s No. 3 Ferguson, oil sand 644-56 feet, initial production 30 bbls., total depth 656 feet.

James H. McCamey's No. 1 Garvey, dry and abandoned, total depth 1,235 feet. Parsons & Silkwood's No. 1 Carter Brothers, dry and abandoned, total depth 1,202 feet. Perkins & Cullum's No. 7 Boyles, sandy lime 1,153-69 feet, initial production 225 bbls., total depth 1,169 feet, treated with acid; No. 8 Boyles, saturated lime at 1,147-65 feet, treated with acid; No. 11 Goyles, lime 1,153-61 feet, initial production 125 bbls., total depth 1,161 feet, treated with acid. Petroleum Producers Co.'s No. 4 Richardson, oil sand 1,225-66 feet, initial production 100 bbls., total depth 1,266 feet. Gordon T. West's No. 2 Ray, dry and abandoned, total depth 1,142 feet.

Cooke County

John Gray's No. 1 Felker, dry and abandoned, total depth 1,561 feet.

Wilbarger County

Atlantic Oil Producing Co.'s No. 15 Leds-Waggoner, initial production 100 bbls., total depth 2,703 feet. W. B. Hamilton's No. 4-L Waggoner, oil sand 1,287-95 feet, initial production 16 bbls., total depth 1,296 feet.

Young County

King Royalty Co.'s No. 13-A Johnson, oil sand 531-46 feet, initial production 15 bbls., total depth 546 feet. Petroleum Producers Co.'s No. 4 Burris, dry and abandoned, total depth 779 feet. D. L. Wolfe's No. 1 Graves, dry and abandoned, total depth 972 feet.

WALTER H. SWIFT DIES

Walter H. Swift, aged 42, assistant cashier of the Standard Oil Co. of New Jersey, died February 11 at his home at Larchmont, N. Y. Death was due to a heart attack. He had been connected with the New York office of the Standard company since 1917, and was known to most of the employes. He is survived by his widow and four children.

GULF SALES MEETING

ROME, Ga., Feb. 17.—Agents and salesmen of the northwest district of the Gulf Refining Co. held their annual sales meeting at the Forrest Hotel last week. The session was called by W. F. Darby, supervisor from Atlanta, Ga.

H. F. Sinclair Optimistic Over Prospects for Oil

The directors of the Consolidated Oil Corp. have declared a "recovery dividend" of $4,000,000, equivalent to 28 cents a share on the 14,218,835 common shares outstanding. The dividend, payable on April 7 to stock of record of March 10, is the first on the junior issue of the present corporation of the Sinclair Consolidated Oil Corp., Prairie Oil & Gas Co. and the Prairie Pipe Line Co.

The directors also authorized retirement of $5,000,000 7 per cent bonds. It is understood the corporation reduced its funded indebtedness from $57,719,700 at the close of 1932 to less than $50,000,000 at the end of last year. The $5,000,000 to be called will be in addition.

A resolution by the board of directors given out by H. F. Sinclair, chairman of the executive committee, says:

"It is the intention of this board, if expectations are realized and conditions justify, to declare another dividend as of August 31, 1934, on the common stock, and after the operations of the corporation for the entire year 1934 are known and its net earnings for the full year have been determined by the board of directors, after providing for all charges and adequate reserves, to declare a final dividend, pursuant to the policy embodied in this resolution, on the common stock of substantially all such net earnings after deducting therefrom the amount of all dividends paid during the year on the preferred and common stocks."

Mr. Sinclair explained that this action of the board of directors was expressly limited to this year.

"It was believed, in view of present earnings and the improved prospects for stable conditions in the industry," Mr. Sinclair said, "the board was justified in approving at this time the plan here outlined. Another reason for the action now taken was the desire to contribute in a practical manner to the recovery program.

"In contrast with the demoralized conditions in the first half of last year, earnings began to be made in July and have since continued. Our volume of sales have been well maintained, so that the corporation is in a position to profit from the better outlook.

"It was emphasized, however, that any further dividends from this year's earnings will necessarily depend upon the success of the industry, supplemented by governmental co-operation, in maintaining a price structure upon which profits can be made."

Mr. Sinclair said he was optimistic about the outlook for the oil industry. He said the oil pool was organized and ready to function, but it could not operate effectively until hot oil was eliminated.

EL RIO ELECTION

AMARILLO, Tex., Feb. 17.—The following officers of the El Rio Oil Co., Amarillo, have been re-elected for the current year: O. H. Lloyd, of Vega, president; George Menke, Bushland, vice president; Sophia Meyer, secretary; E. W. Little, treasurer. The other directors are: Fred B. Manley, Hobbs, N. M.; William F. Millery, Happy; W. C. Hulsey, Tulia, and A. E. Meyer.

DEEP OIL ELECTION

WICHITA FALLS, Tex., Feb. 17.—The Deep Oil Development Co. of Wichita Falls, Tex., has re-elected Frank Kell as chairman of the board, N. H. Martin president, Sam Householder secretary and treasurer and J. S. Bridwell, J. J. Perkins and Harry Hines vice presidents. Mr. Hines was reappointed general manager.

GLENN FORD McKINNEY DIES

Glenn Ford McKinney, 65 years old, vice president of the National Fuel Gas Co., New York, died February 16, at the home of his father, Southern Pines, N. C. Death was due to heart disease.

East Central Texas Wildcats

(Continued from Page 45)

Gholson Drilling Co.'s No. 1 Alliance Trust Co., 330 ft. S and E of Humble's Alliance Trust Co. 3,000-ac. tract, Simon Sanchez Sur. No. 9 ..... Location.
Shell Petroleum Corp.'s No. 1 J. N. Jones, 800 ft. from N line of survey and 1,000 ft. from E line of survey, J. F. Summeralls Sur. ..... Coring 5,923 ft.
Shell Petroleum Corp.'s No. 1 Lee, 1,500 ft. from NW and SW line of farm and survey, William Cooper Sur. ..... Drlg. 4,980 ft.
Standard Oil Co. of Kansas' No. 1 A. W. Johnson, 466 ft. from NE line, 466 ft. from NW line of 100-ac. tract, Simon Sanchez Sur. No. 7 ..... Location.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 G. W. Burkett, 8,500 ft. due S and 1,400 ft. from W at right angles from Magnolia Ferry, Simon Sanchez Sur. No. A-23 ..... Bldg. road to location.

LIMESTONE COUNTY

J. Rodgers et al's No. 1 Vol DeLone, 1,516 ft. from W line and 600 ft. from N line of W 100-ac. tract, Pedro Varela Sur. ..... Shut down.

NAVARRO COUNTY

Syam Oil Co.'s No. 1 R. H. Mays, 300 ft. from S and E lines of 206.47-ac. tract, N. H. Carroll Sur. ..... Reaming to core ahead; tested salt wtr. from 3,546-96 ft.; T.D. 3,896 ft.

RAINES COUNTY

J. W. Hallsell et al's No. 1 P. F. Jones, 400 ft. out of SW cor. of 22-ac. tract, 2½ miles S of Alba, B.B. B.&C. Sur. ..... Rig up.

RUSK COUNTY

Gant-Garvin and Wegner's No. 1 Edwards, 3,280 ft. from W line and 6,800 ft. from S line of survey, M. V. Pena Sur. ..... Rig up.
Perry et al's No. 1 Brown and Chisum, 150 ft. E and 2,650 ft. N of SW cor. of survey, L. M. Sparks Sur. ..... Waiting on cmt. to set; T.D. 2,592 ft.
Louisiana Pipe & Supply Co.'s No. 1 S. E. Arnold, 330 ft. from E line and 1,520 ft. from S line of survey, W. M. Christian Sur. ..... Drlg. 3,154 ft.
J. W. Mason et al's No. 1 J. R. Irion, 4,800 ft. from N line and 9,050 ft. from E line of survey, Juan Vargas Sur. ..... Derrick.
Sanders et al's No. 1 M. Lee, 2,300 ft. from N line and 1,975 ft. from E line of survey, J. H. Sparks Sur. ..... Waiting on cmt. to set; T.D. 3,628 ft.
Stanolind Oil & Gas Co.'s No. 1 J. W. Spence, 607 ft. W and 330 ft. from N of SE cor. of lease, Walker Pettit Sur. ..... Drlg. 2,118 ft.

UPSHUR COUNTY

D. C. Fisher and Dye's No. 1 Starr, 700 ft. from N line and 700 ft. from W line of survey, Charles Cooper Sur. ..... Derrick.
C. H. Lyons et al's No. 1 T. J. Dunbar, 330 ft. out of most westerly SW cor. of lease, J. F. Davidson Sur. ..... Rig up.
B. F. Phillips' No. 1 Starr, 1,980 ft. from N line and 850 ft. from W line of survey, Charles Cooper Sur. ..... Derrick.
B. F. Phillips et al's No. 1 D. A. Fleet, SE cor. of B. Holloway Sur., Charles Cooper Sur. ..... Coring 3,700 ft.

VAN ZANDT COUNTY

Gillum and Allen et al's No. 1 A. T. Bass, 450 ft. from W line and 150 ft. from N line of 10-ac. tract, William Hart Sur. ..... Derrick.
Griffith Bros.' No. 1 Bruce, 1,000 ft. from S line and 330 ft. from E line of 124-ac. tract, G. Martinez Sur. ..... S.D. 1,562 ft.
Humble O. & R. Co.'s No. 1 S. R. Ray, 300 ft. S, 180 ft. W of J. D. Listenbee 30-ac. lease in Nacogdoches County School Lands Sur. ..... Waiting on pumping equipment; T.D. 1,237 ft.
W. E. McKinney et al's No. 1 B. T. Davis, 210 ft. from N line and 160 ft. from W line of 139-ac. tract, J. Goodman Sur. ..... Derrick.
Pure Oil Co.'s No. 2 Ray, 250 ft. N of S line and 182 ft. W of E line of tract, Nacogdoches County School Land Sur., elevation 449.7 ft. ..... S.D. 1,215 ft.
Ray Drlg. Co.'s No. 1 J. W. Mallory, 1,180 ft. from S line, 150 ft. from W line of 217-ac. tract, John Walling Sur. ..... Derrick.

WOOD COUNTY

D. T. Cauble and Thompson's No. 1 N. G. Bobett, 650 ft. from S line and 330 ft. from W line of tract, 2½ miles NW of Mineola, Daniel Fuller Sur. ..... Drlg. 4,965 ft.

Wildcat Operations in West Texas

(Continued from Page 44)

FISHER COUNTY

Condor Pet. Co.'s No. 1 Herring, 450 ft. from S and 330 ft. from W line of Sec. 193, Blk. 1, B.B.B.&C. Sur. ..... Location.
Condor Pet. Co.'s No. 2 Wilson, 640 ft. from N and 2,310 ft. from W line of Sec. 6, Blk. R, W. E. Richardson Sur. ..... Cellar
Cranfill & Reynolds' No. 3 J. H. Young, 330 ft. W and 330 ft. S of NE cor. of survey, Sec. 205, B.B.B.&C. Sur. ..... Drlg. 2,230 ft.
Merry Bros. and Perini's No. 1 J. J. Steele, 330 ft. E and 150 ft. N of SW cor. NE Sec. 210, B.B.B.&C. R.R. Sur. ..... Will treat with acid; T.D. 2,922 ft.; swabbed 400 bbls. of oil on proration test.
E. L. Smith Oil Co.'s No. 1 fee, 450 ft. from S and 330 ft. from E. Sec. 203, Blk. 1, B.B.B.&C. Sur. ..... S.D. 1,975 ft.
Roeser & Pendleton's No. 2 Frank Steele, 1,470 ft. from S and 990 ft. from W line of Sec. 210, Blk. 1, B.B.B.&C. Sur. ..... Drlg. 130 ft.
Sinclair Prairie Oil Co.'s No. 2 Frank Steele, 990 ft. from N and 330 ft. from E line of Sec. 72, Blk. 1, H.&T.C. Sur. ..... Drlg. 618 ft.
Stanolind Oil & Gas Co.'s No. 3 F. Steele, 660 ft. from S and 2,310 ft. from W line of Sec. 210, Blk. 1, B.B.B.&C. Sur. ..... Drlg. 1,610 ft.
Stanolind Oil & Gas Co.'s No. 4 Steele, 1,170 ft. from S and 1,650 ft. from W line of Sec. 210, Blk. 1, B.B.B.&C. Sur. ..... Rig up rotary.
Southern's No. 1 King, 660 ft. from N and 330 ft. from W line of SW Sec. 191, B.B.B.&C. Sur. ..... S.D. 1,570 ft.
Texas Inland Oil & Gas Co.'s No. 1 First National Bank of Hamlin, 1,980 ft. from N and 990 ft. from W, Sec. 191, Blk. 1, B.B.B.&C. Sur. ..... S.D. 2,995 ft.
Texas Co.'s No. 4 T. A. Jean, 990 ft. from N and E lines of Sec. 201, Blk. 1, B.B.B.&C. Sur. ..... Drlg. 1,035 ft.

GAINES COUNTY

R. H. Gill et al's No. 1 Crews, 1,320 ft. from S and 1,320 ft. from W line of Sec. 9, Blk. A-30, P.S.L. Sur. ..... Drlg. 4,574 ft.

GLASSCOCK COUNTY

Continental Oil Co.'s No. 1 Gilbreath, 330 ft. from N line and 1,980 ft. from E line of Sec. 24, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Standing shut in after acid treatment; T.D. 2,580 ft

Empire Gas & Fuel Oil Co.'s No. 2 Hall, 330 ft. from N and W lines of Sec. 21, Blk. 33, Twp. 2s, T.&P. Sur. ..... Straightening bad hole; T.D. 1,675 ft.

Humble Oil & Ref. Co.'s No. 4 Arrington, 330 ft. from N line and 990 ft. from W line, Sec. 23, Blk. 33, Twp. 2s, T.&P. Sur. ..... Waiting on proration gauge; T.D. 2,280 ft.

Shell Pet. Corp.'s No. 3-A Kloh, 660 ft. from E and 330 ft. from S line, Sec. 13, Blk. 33, Twp. 2s, T.&P. Sur. ... Drlg. 2,141 ft.

Simms Oil Co.'s No. 5-A R. C. Coffee, 1,002 ft. from the W line and 1,270 ft. from the S line of Sec. 15, T.&P. Sur., Blk. 33, Twp. 2s ..... Location.

HOWARD COUNTY

L. C. Harrison et al's No. 2 Texas Land & Mortgage Co. 2,310 ft. from E line and 330 ft. from the S line of Sec. 4, T.&P.R.R. Sur., Blk. 30, Twp. 1s ..... Location

Humble Oil & Ref. Co.'s No. 2 Settles, 990 ft. from W and 330 ft. from S, Sec. 132, Blk. 29, W.&N.W. Sur. ... Drlg. 1,023 ft.

Merrick & Lamb's No. 10 Chalk, 1,650 ft. from W and 2,310 ft. from N, Sec. 125, Blk. 29, W.&N.W. Sur. .... Drlg. 1,510 ft.

Pure Oil Co.'s No. 14 Chalk, 1,650 ft. from N and 2,310 ft. from E, Sec. 125, Blk. 29, W.&N.W. Sur. ..... Drlg. 1,730 ft.; 100 ft. of oil in 12 hrs.

Joe Rusk et al's No. 2 G. M. Dodge Estate, 330 ft. from N line and 2,310 ft. from the E line of Sec. 9, H.&T.C.R.R. Sur., Blk. 30, Twp. 2s ..... Waiting to test after acid treatment; T.D. 2,860 ft.

Schermerhorn Oil Co.'s No. 8 Kloh, 1,650 ft. from S and 330 ft. from W, Sec. 13, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Drlg. 2,130 ft.

Sinclair Prairie Oil Co.'s No. 1 Perry Jones, 2,310 ft. from W and 330 ft. from N, Sec. 9, Blk. 30, Twp. 1s, T.&P.R.R. Sur. ..... Drlg. 220 ft.

Sinclair Prairie Oil Co.'s No. 10 Dodge, 2,310 ft. from S and 330 ft. from E, Sec. 1, Blk. 30, Twp. 1s, T.&P. R.R. Sur. ..... S.D. 2,315 ft.

Southern Oil Co.'s No. 1 Denman, 2,310 ft. from N line and 330 ft. from W line of Sec. 10, Blk. 30, Twp. 1s, T.&P.R.R. Sur. ..... S.D. 1,965 ft.

Sun Oil Co.'s No. 6 Phillips, 1,650 ft. from S and 330 ft. from E, Sec. 14, Blk. 33, Twp. 2s, T.&P.R.R. ..... Underreaming 750 ft.

IRION COUNTY

Williams-Short's No. 1 Gentry, 2,300 ft. from N line and 2,080 ft. from W line of Sec. 1, Blk. 3, H.&T.C. Sur... S.D. 835 ft.

JONES COUNTY

Clay & Lancaster's No. 2 Brewer, 700 ft. S and 150 ft. E of NW cor. of J. W. Martin Sur. ..... Rig up and S.D.

Jack Roberts' No. 3 Swann, 2,300 ft. from N and 1,600 ft. W of SE cor. of I. Milley Sur. ..... T.D. 2,549 ft.; will treat with acid.

Southern Oil Corp.'s No. 2 Williams, 330 ft. from S and W line of Sec. 17, Blk. 19, T.&P. Sur. ..... Machine.

LOVING COUNTY

R. L. Allen's No. 1 fee, 4,290 ft. from NE line, 330 ft. from SE line, Sec. 82, H.&T.C. Sur. ..... Location

R. L. Allen's No. 2 fee, 4,290 ft. from NE line, 990 ft. from SE line, Sec. 82, Blk. 33, H.&T.C. Sur. .... Location

R. L. Allen's No. 3 fee, 4,290 ft. from NE line, 990 ft. from NW line, Sec. 82, Blk. 33, H.&T.C. Sur. .... Location

R. L. Allen's No. 4 fee, 4,290 ft. from NE line, 330 ft. from NW line, Sec. 82, Blk. 33, H.&T.C. Sur. .. Location

Eppenauer Drlg. Co.'s No. 2-A Allen, 330 ft. from SE and 1,650 ft. from SW, Sec. 4, Blk. 2, W.&N.W. Sur... Drlg. 3,550 ft.

William Little's No. 1 Reichard & Dehle, 1,320 ft. from NE and 1,120 ft. from SE line of Sec. 92, Blk. 1, W.&N.W. Sur. ..... Drlg. 425 ft.

Sinclair Prairie Oil Co.'s No. 1 Allen, 330 ft. from SE lines and 990 ft. from SW lines of Sec. 4, Blk. 2, W.&N.W. Sur. .. S.D. 4,301 ft.; 175 ft. of oil in hole.

Sinclair Prairie Oil Co.'s No. 2 Bell, 410 ft. from SE and 1,035 ft. from NE of Sec. 91, Blk. 1, W.&N.W. Sur. ..... Drlg. 1,955 ft.

Texas Pacific Coal & Oil Co.'s No. 1 Carmine, C of SE of SW of Sec. 40, Blk. 54, Twp. 1, T.&P. Sur. ..... Drlg. 1,290 ft.

PECOS COUNTY

California Oil Co.'s No. 23 Yates, 315 ft. W of No. 1 Reid, Sec. 34, Blk. 194, G.C.&S.F. Sur. ..... Drlg. 1,091 ft.

California Oil Co.'s No. 14 Mrs. M. A. Smith Lease No. 3, 2,028 ft. from the S line and 1,650 ft. from the E line of Sec. 35, H.&T.C. Sur., Blk. 194 ..... Material on ground.

Cardinal Oil Co.'s No. 17-E Tippett, 150 ft. from E line of W half and 720 ft. from N of No. 5-E, Sec. 40, Blk. 194, G.C.&S.F. Sur. ..... Waiting on cmt. to set; T.D. 481 ft.

Cardinal Oil Co.'s No. 18 J. H. Tippett, 850 ft. from N and 531 ft. from W of the SE cor. of the W half of Sec. 40, G.C.&S.F. Sur., Blk. 194 ..... Drlg. 460 ft.

Culberson Bros.'s No. 15-B Monroe, 725 ft. from N line and 1,380 ft. from E line of Sec. 39, Blk. 194, G.C.&S.F.R.R. Sur. ..... Location

Humble Oil & Ref. Co. and Phillips Pet. Co.'s No. 1 J. L. Nutt, 3,960 ft. from the N line and 890 ft. from the E line of Sec. 16, T.&St.L. Sur., Blk. 125 ... Location.

Humble Oil & Refining Co.'s No. 1 White, Baker, 1,320 ft. from N and E lines of Sec. 44, Blk. Z, T.C. Sur... Drlg. 7,898 ft.

Mid-Kansas Oil & Gas Co.'s No. 10 Smith, 150 ft. from N line and 250 ft. from E line of Sec. 31, Blk. 194, G.C.&S.F. Sur. ..... Testing; T.D. 1,297 ft.

Mid-Kansas O. & G. Co.'s No. 15 Smith-Taylor, 1,296 ft. from S line, 1,390 ft. from W line, Sec. 33, G. C.&S.F. Sur., Blk. 194 ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 24 Smith-Taylor, 350 ft. W of S half of Turner Tract No. 1, Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... Road.

Mid-Kansas Oil & Gas Co.'s No. 8 Fred Turner, Jr., 263 ft. from N and 55 ft. E of N half of Tract No. 1, Fred Turner Sur. ..... Waiting on cmt. to set; T.D. 1,142 ft.

Mid-Kansas Oil & Gas Co.'s No. 25 Smith-Taylor, 344 ft. W of SE cor. of S half of Turner Tract No. 1, Sec. 33 ..... S.D. 750 ft.

Mid-Kansas Oil & Gas Co.'s No. 26 Smith-Taylor, 295 ft. S and 344 ft. E of SE cor. of S half of Tract No. 1 ..... Cellar.

Mid-Kansas Oil & Gas Co.'s No. 1 Turner, 350 ft. from N line and 350 ft. from W line of Turner Sur. No. 3. S.D. 590 ft.

Mid-Kansas Oil & Gas Co.'s No. 3 Turner, 739 ft. from N and 209 ft. from W line of Turner Sur. No. 4 .... Running tubing; T.D. 1,253 ft.

Mid-Kansas Oil & Gas Co.'s No. 3 Fred Turner, 535 ft. from S line and 500 ft. from W line of Tract No. 2. Drlg. 407 ft.

Mid-Kansas Oil & Gas Co.'s No. 8 Fred Turner, 204 ft. S and 55 ft. W of the most northerly NW cor. of I. G. Yates Sur. A-8,195, but in Fred Turner, Jr., Survey, Tract No. 1 ..... T.D. 500 ft.

Mid-Kansas Oil & Gas Co.'s No. 13-H Yates, 408 ft. S of N line of Sec. 33 and 344 ft. W of SE cor. of S half of Tract No. 1 ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 13-H Yates, 408 ft. S of N line of Sec. 33 and 344 ft. E of SE cor. of S half of Tract No. 1 ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 38-A Yates, 350 ft. N and 334 ft. W from the NW cor. of Turner Tract No. 2 in Sec. 34¼, I.G. Yates Sur. ..... T.D. 1,116 ft.

Mid-Kansas Oil & Gas Co.'s No. 38-A Yates, 350 ft. E and 305 ft. S from the NE cor. of Turner Tract No. 3 in Sec. 34¼, I. G. Yates Sur. ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 39-A Yates, 150 ft. N and 250 ft. W of the NW cor. of Turner Tract No. 4 in Sec. 34¼, I. G. Yates Sur. ..... Cellar.

Mid-Kansas Oil & Gas Co.'s No. 40-A Yates, 344 ft. from E line and 395 ft. from N of SE cor. of S half of Turner Tract No. 1 ..... S.D. 630 ft.

Mid-Kansas Oil & Gas Co.'s No. 42-A Yates, 56 ft. E and 204 ft. S of the extreme NE cor. of lease, Sec. 34½, Blk. 194, G.C.&S.F. Sur. ..... S.D. 1,194 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 14-C University, 725 ft. from S line and 2,730 ft. from E line of Sec. 25, Blk. 9, University Land Sur. ..... Flowed 624 bbls. in 24 hrs.; T.D. 8,459 ft.

Big Lake Oil Co.'s No. 15-C University, 660 ft. from E line and 660 ft. from S line of Sec. 25, Blk. 9, University Land Sur. ..... Moving in boilers.

Group Oil Co.'s No. 10-B University, 1,900 ft. from N and 1,805 ft. from E line, Sec. 36, Blk. 9 ..... Cellar.

E. P. Kirschner and White's No. 1 W. A. White and McIntosh, 720 ft. from E and 800 ft. from N of Sec. 1,223, E.L.R.R. Sur. ..... Drlg. 540 ft.

RUNNELS COUNTY

Agnew & Sons' No. 2 Fowler, 1,165 ft. from S and 150 ft. from W of NE cor. of Blk. 23, N. Travis Sur..... Drlg. 1,193 ft.

Anderson et al's No. 1 W. F. James, 330 ft. from N and W lines of Subdiv. No. 20, Norvell Travis Sur. ..... Spudded and S.D.

Golden Pet. Corp.'s No. 3 McMillan, 780 ft. from W and 330 ft. from N of Subdiv. No. 22, N. Travis Sur. No. 533 ..... Drlg. 1,200 ft.

W. S. Sawyer et al's No. 1 Giesecke, 1,311 ft. from N and 4,606 ft. from E lines of survey, Blk. 131, James Hughes Sur. ..... Drlg. 670 ft.

Prairie Oil & Gas Co.'s No. 1 T. B. Wade, 2,597 ft. from N and 2,140 ft. from E line of Subdiv. No. 10, Norvel Travis Sur. ..... Fishing 1,381 ft.

Wahlenmaier Pet. Co.'s No. 1 T. C. Hall, 330 ft. out of SW cor. E.T.R.R. Sur. No. 149 ..... Drlg. 2,310 ft. (no report).

F. D. Williams' No. 1 J. L. Elkins, 2,225 ft. from E and 1,300 ft. N of SW cor. of Blk. 12, but in Blk. 13, N. Travis Sur. No. 533 ..... Rig up and S.D.

TERRELL COUNTY

H. H. Sides' No. 1 Phelps, 2,157 ft. from N line and 2,482 ft. from the W line of Sec. 5, Blk. 4-A, G. W. Turley Sur. ..... Fishing 5,600 ft.

UPTON COUNTY

Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W. Sec. 197, Blk. F, C.C.S.D.&R.G.N.G. Drlg. 8,946 ft.

Powell-Gap Oil Co.'s No. 1 J. F. Lane, 1,320 ft. from W line of Sec. 1, G.C.&S.F. Sur. ..... Moving in machine.

Texas Pacific Coal & Oil Co.'s No. 1-C J. H. Sherk, 1,650 ft. from S and 330 ft. from W, Sec. 1, Blk. 3-B, M.K.&T. Sur. ..... Rig up.

Texas Pacific Coal & Oil Co. and Simms Pet. Co.'s No. 2 J. F. Lane, 990 ft. from the S line and 330 ft. from the W line of Sec. 36, M.K.&T. Sur., Blk. 1 ... Rig up.

Williams & Williams Drlg. Co.'s No. 1 Robbins, 1,600 ft. from S and 1,900 ft. from E, Sec. 4, G.C.&S.F. Sur. .. Drlg. 700 ft.

VAL VERDE COUNTY

South-Western Exploration Co.'s No. 1 E. K. Fawcett, 2,310 ft. from S and 2,310 ft. from E, Sec. 14, Blk. 1, G.C.&S.F. Sur. ..... Moving in material.

WARD COUNTY

Atlantic Oil & Prod. Co.'s No. 10 Johnson, 990 ft. from NE line and 330 ft. from NW line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,318 ft.

Atlantic Oil & Prod. Co.'s No. 12 Johnson, 990 ft. from SE line and 990 ft. from NE line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,415 ft.

Atlantic Oil & Prod. Co.'s No. 13 Johnson, 330 ft. from NE line and 330 ft. from SE line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Spudded.

Atlantic Oil & Prod. Co.'s No. 15 Johnson, 330 ft. from SE line and 1,650 ft. from NE line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Location.

California Oil Co.'s No. 5 York, 1,650 ft. from S and 990 ft. from SW, Sec. 10, Blk. 34, H.&T.C. Sur. ..... Location.

California Oil Co.'s No. 6 J. F. York, 2,310 ft. from the NW line and 990 ft. from the SW line of Sec. 10, Blk. 34, H.&T.C. Sur. ..... Waiting on cmt. to set 854 ft.

S. Caprito et al's No. 2 Pure-Bennett, 990 ft. from SE and 330 ft. from NE lines of Sec. 16, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,533 ft.

Gulf Prod. Co.'s No. 41 O'Brien, 1,650 ft. from N and 990 ft. from E lines of Sec. 17, Blk. F, G.M.M.B.&A. Sur. ..... Drlg. 2,515 ft.

Gulf Prod. Co.'s No. 42 O'Brien, 2,310 ft. from N and 330 ft. from S, Sec. 17, Blk. F, G.M.M.B.&A. Sur. .... Drlg. 910 ft.

Humble Oil & Refining Co.'s No. 2 Louis Richter, 1,650 ft. from the NW line and 1,470 ft. from the SW line of Sec. 23, H.&T.C. Sur., Blk. 34 ..... Rig up rotary.

Jack Leidecker's No. 2 Archenhold, 2,310 ft. from NE and 2,310 ft. from SE, Sec. 23, Blk. 5, H.&T.C. Sur... Drlg. 1,589 ft.

Simms Oil Co.'s No. 1 W. D. Johnson, 330 ft. from the NE and SE lines of Sec. 28, H.&T.C. Sur., Blk. 34.... Drlg. 2,403 ft.

Sinclair Prairie Oil Co.'s No. 4 Archenhold, 2,310 ft. from NW line and 2,310 ft. from SW line of Sec. 23, Blk. 5, H.&T.C. Sur. ..... Cleaning out after shot; T.D. 3,059 ft.

Tex-Mex Pet. Corp. et al's No. 2 Llano-Sloan, 990 ft. from NW and 2,310 ft. from SW, Sec. 16, Blk. 5, H.&T.C. Sur. ..... Rigging up.

Tex-Mex Pet. Corp.'s No. 3-B Shell-Sloan, 2,310 ft. from NE and 990 ft. from NW, Sec. 16, Blk. 5, H.&T.C. Sur. ..... Cellar.

Tex-Mex Pet. Corp. et al's No. 2 Cal-Archenhold, 990 ft. from NE and 330 ft. from SE, Sec. 23, Blk. 5, H.&T.C. Sur. ..... Location.

S. A. Thompson's No. 6 Johnson, 1,650 ft. from NW and 1,650 ft. from SW Sec. 9, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,169 ft.

WINKLER COUNTY

Harry Adams' No. 2 Scarborough (old well being drilled deeper), 105 ft. from N and 1,000 ft. from E, Sec. 1, Blk. 77, P.S.L. Sur. ..... Drlg. 1,800 ft.

Magnolia Pet. Co.'s No. 4 Scarborough, 1,650 ft. from N line and 330 ft. from W line of Sec. 1, Blk. 77, P.S.L. Sur. ..... T.D. 2,830 ft.

Magnolia Petroleum Co.'s No. 2 Walton, 330 ft. from N and 330 ft. from E, Sec. 19, Blk. 74, P.S.L. Sur. .... Fishing 2,515 ft.

McCurdy & Easter's No. 1 Scarborough, 1,650 ft. from W and 2,310 ft. from S, Sec. 1, Blk. 77, P.S.L. Sur... Rigging up and S.D.

Sid Richardson's No. 6-A Scarborough, 330 ft. from N and 990 ft. from W, Sec. 1, Blk. 77, P.S.L. Sur. ..... T.D. 3,015 ft.; flowing 20 bbls. per hour.

Sid Richardson's No. 5-A Scarborough, 330 ft. from W and 190 ft. from S, Sec. 1, Blk. 22-C, P.S.L. Sur. .... Moving in machine.

Sid Richardson's No. 2-B Scarborough, 2,310 ft. from E line and 990 ft. from S line of Sec. 18, Blk. 74, P.S.L. Sur. ..... Drlg. 1,930 ft.

Sid Richardson's No. 2-A State, Skelly, Scarborough, 102 ft. from N and 2,310 ft. E of NW cor. of Sec. 1, Blk. 77, P.S.L. Sur. ..... Drlg. 1,435 ft.

Sid Richardson et al's No. 2 State-Scarborough, 102½ ft. N and 2,310 ft. from E of the NW cor. of Sec. 1, Blk. 77, P.S.L. Sur., but located in State-Scarborough strip, Blk. WF ..... Location.

Sinclair Prairie Oil Co.'s No. 3 W. F. Scarborough, 1,650 ft. from E line and 990 ft. from N line of Sec. 1, Blk. 17, P.S.L. Sur. ..... Drlg. 2,955 ft.

Sinclair Prairie Oil Co.'s No. 1-C Scarborough, 2,310 ft. from W and 102½ ft. S of SE cor., Sec. 1, Blk. 22-C, P.S.L. Sur. ..... Drlg. 1,665 ft.

Reconditioning Practice as Applied to Old Wells in Pennsylvania Fields Returns Ample Profits

By R. C. CONINE

OIL CITY, Pa., Feb. 19.—Results of a reconditioning project involving 10 oil wells which were drilled in the eighties, three of which had been abandoned a dozen years ago, were available this week after two months of observation. The cost of reclaiming and cleaning out totaled $2,655, including labor, shot and new materials. Before they were reconditioned the seven wells, which were still on the pump, produced a total daily average of 1¼ bbls. with a market value of $2.95.

The three wells had been abandoned because of water breaking in, and all of the 10 wells were practically sealed by gypsum that had come from upper formations. In some of the wells sand from the productive formation had caved and filled in.

After reconditioning two of the wells were used as air-gas pressure intakes, and oil production from the remaining eight wells now totals a daily average of 13.14 bbls., with a market value of $30.01. This represents an increase of $27.15 in the market value of the daily production, or an increase of $1,629 for the two months the project has been under observation. This should answer the question, at least in the Venango and surrounding "broken sand" fields, as to whether it is profitable to recondition old wells.

Dewatering Operations

Another interesting reclamation operation is that of dewatering wells abandoned in the early days. Along Oil Creek, from Pioneer to the environs of Oil City, scores of wells were improperly abandoned and surface water, added to that ordinarily in the sand, filled the holes. It has been felt that the productive sands reached by these wells were never properly exploited.

In one dewatering operation at Pioneer the well was put on the pump and worked for three years before the water was exhausted to a point where the oil brought up was in commercial quantities. The well then produced 15 bbls. of oil per day for two years before it began to taper appreciably, and is now, after seven years, producing a barrel of oil a day.

Natural gasoline recovery plants are operated in connection with the dewatering work. The gas pumped from the wells on one lease is run to compressors where the pressure ranges from 35 pounds to 50 pounds, sufficient to strip about 3,400 gallons per month from a wet gas containing between 8 and 9 gallons of condensible vapor gasoline per thousand feet. It is interesting to note that the gravity of the oil produced from the Pioneer well mentioned above was 45 degrees A.P.I. at the beginning and has now dropped to 41 degrees A.P.I.

Value of Coring Property

Probably the most striking example of the large financial returns on scientific methods applied in the interests of increased crude oil recovery, is that of a project in this area in which the study of underground conditions by means of core drilling and analysis pointed the way to a five-fold increase in ultimate recovery.

A study of the development of this property is of particular interest in that it represents two distinct phases of modernization. First, the departure from the old pumping method of gas-air repressuring without knowledge of underground conditions, and second, the advance to core drilling and application of pattern arrangement in secondary recovery with air-gas repressuring.

The accompanying diagram shows the arrangement of oil wells and pressure intake wells on the lease after the operators spent $26,500 in drilling new wells and converting old producers to gas-air intakes.

Well pattern followed in development of a repressuring system in Venango, Butler, Forest and Clarion Counties, Penna.

It was seriously considered abandoning the lease before this venture, as operations represented a substantial loss. However, it was decided to give repressuring a trial. New wells were drilled and five were converted to pressure intakes at the cost mentioned above.

$44,000 Return

In a period of five years, just closed, losses in operating this property were wiped out and profits realized have totaled approximately $44,000. The most surprising element in the entire proposition was not discovered until the second phase of the modernization program was started. This was the revelation made by the cores taken on the property that less than 2 feet of productive sand had been exploited and that far more prolific formations had been entirely ignored.

What the Cores Showed

At the close of the five-year period discussed above, production on the lease had declined to a point where additional air-gas volume introduced in the sand failed to displace additional oil. A core was taken and it was found that all of the production during the development of the property had come from 24 inches of a first sand streak. Samples taken from the 2-foot streak showed an air content of 96 per cent, indicating a splendid job of repressuring in the narrow streak. The cores further revealed that on this property there were two sands suitable for exploitation by the air-gas method.

The first sand, which contained the 2-foot productive streak, was 39 feet thick. Twenty-four inches of the formation had been stripped of oil; 22 feet of the structure were barren, and 15 feet contained about 3,000 bbls. per acre, but only a small portion of this was available for recovery.

Important Second Sand

The second sand, which had been entirely ignored, cored 23 feet, of which 9 feet were barren; 3 feet were hard and impermeable, and the remaining 11 feet contained about 6,500 bbls. to the acre. The oil in this formation was in a very good sandstone, with good permeability, and showed a very small gas content.

The core showed that the operators of this lease had neglected their best sand, which, by the use of compound packers (noted on page 12 of the January 18 issue of The Oil and Gas Journal), could have been operated at the same time the first sand was being produced with very little additional capital expenditure.

Pattern Development

It was also indicated in a study of the information provided by the cores, that with efficient recovery methods involving the arrangement of pressure and production wells in accordance with proven development patterns (discussed on page 9 of the October 12 issue of the Journal, and page 13 of the November 2 issue), the ultimate total recovery of oil from this lease might be increased five-fold.

The owners have already started work on the use of packers (not compound, as the first sand has been stripped), and working out a pattern of pressure and production wells which will most successfully achieve the objective of displacing the oil in the second sand without channeling or trapping the fluid.

An economy not to be overlooked in connection with the early development of this lease with air repressuring is in respect to fuel. When the lease was being pumped without repressuring, only enough gas to run the pumping engines two hours a day was produced, and the remainder of the gas required was purchased at a relatively high price. Two months after air repressuring was started sufficient gas was produced to run a 50-horsepower plant engine, 25-horsepower pumping engine, to provide heat for the house, and for steaming oil in winter. There is now sufficient gas for all purposes, including recycling underground.

Cost of Coring and Analysis

In this particular area, including Venango, Butler, Forest and Clarion Counties, the cost of coring is relatively low. This cost is often as low as $100 for the first 10 feet of formation cored, and $5 per foot additional, or lower (the $100 charge making the job worth while). This cost includes the use of core drilling apparatus, competent operator, and an analysis of the core samples as to saturation and porosity.

Lower in Middle District

These costs are lower in the middle district due to the fact that most of the wells are shallow and the formations encountered offer no particular difficulties to operators familiar with the characteristics of the various sands. The coring equipment furnished with the job include a core barrel, half a dozen drill shoes, trimmer shoes as needed, special wrenches for core and outer barrel, etc., special short and heavy drilling stem and extra heavy jars.

A short sinker is run above the jars in this district to facilitate the starting of new bits because the upper part of jars and rope sockets are not heavy enough to loosen the core drill if it sticks with a new bit or in muddy formation.

Walter A. Olen Gives Talk on Front-Wheel Stability

Among interesting papers presented before the annual meeting of the Society of Automotive Engineers in Detroit was one on "Front-Wheel Stability in the Interest of Public Safety," by Walter A. Olen, president and general manager of the Four Wheel Drive Auto Co., Clintonville, Wis.

"There are many facts that affect the front-axle stability of a vehicle," said

WALTER A. OLEN

Mr. Olen, "such as load distribution, variation in coefficient of friction of the road surface, acceleration and deceleration, crowned roads, side winds, curves, grades, powered and nonpowered front axles, tires and springs."

In his discussion of load distribution, Mr. Olen pointed out that it is the general practice to place approximately 10 per cent of the gross weight of a commercial vehicle on the front axle. Truck manufacturers are not in agreement on the minimum percentage of the gross load to be carried on the front axle of their trucks, to gain the maximum safety in steering—their recommendation varying from 10 to 30 per cent. Load distributions from 33 to 40 per cent of the gross load on the front axle, Mr. Olen said, gave the best all-around braking performance and assure more positive steering.

Bureau of Mines Statistics for the Month of December, 1933

SUPPLY AND DEMAND OF ALL OILS

(Thousands of barrels of 42 gallons)

	Dec., 1933	Nov., 1933	Dec., 1932	Jan.-Dec., 1933	Jan.-Dec., 1932
NEW SUPPLY:					
Domestic production:					
Crude petroleum	72,060	69,755	58,295	898,874	785,159
Daily average	2,325	2,325	1,880	2,463	2,145
Natural gasoline	3,005	2,931	2,931	33,610	36,281
Benzol*	129	125	86	1,473	1,031
Total production	75,194	72,811	61,312	933,957	822,471
Daily average	2,426	2,427	1,978	2,559	2,247
Imports:					
Crude petroleum	†3,120	†2,235	2,746	32,773	44,682
Refined products	842	975	1,164	13,498	29,812
Total new supply, all oils	79,156	76,021	65,222	980,228	896,965
Daily average	2,553	2,534	2,104	2,686	2,451
Decrease in stocks, all oils	3,926	7,918	9,889	‡8,256	41,792
DEMAND:					
Total demand	83,082	83,939	75,111	971,972	938,757
Daily average	2,680	2,798	2,423	2,663	2,565
Exports:					
Crude petroleum	2,709	3,305	2,154	36,702	27,393
Refined products	5,883	6,350	4,591	69,822	75,882
Domestic demand:					
Motor fuel	28,787	30,262	27,110	378,143	373,900
Kerosene	4,143	3,726	3,149	38,440	33,221
Gas oil and fuel oil	30,527	29,797	29,387	321,395	308,157
Lubricants	1,667	1,538	952	17,066	16,614
Wax	117	112	123	1,260	945
Coke	784	1,194	1,019	10,091	9,592
Asphalt	740	654	729	11,260	12,652
Road oil	243	384	64	6,095	6,648
Still gas (production)	3,557	3,466	3,814	45,212	40,905
Miscellaneous	137	97	104	1,443	1,978
Losses and crude used as fuel	3,788	3,054	2,415	35,042	30,870
Total domestic demand	74,490	74,284	68,366	865,447	835,482
Daily average	2,403	2,476	2,205	2,371	2,283
STOCKS:					
Crude petroleum	355,294	355,614	339,715	355,394	339,715
Natural gasoline	3,186	3,125	3,203	3,186	3,203
Refined products	242,873	246,649	247,188	242,873	247,188
Total, all oils	601,453	605,379	590,106	§601,453	§590,106
Days' supply	224	216	244	226	220

*From Coal Division. †Receipts of foreign crude as reported to the Bureau of Mines. ‡Increase. §Total stocks as of December 31, 1932, and December 31, 1933, are not comparable principally because certain revisions made as of August 31, 1933, have not yet been carried back to January 1, 1933.

COMPARATIVE ANALYSES

(Thousands of barrels of 42 gallons)

	December, 1933 Total	December, 1933 Daily av.	November, 1933 Total	November, 1933 Daily av.	Jan.-Dec., 1933	Jan.-Dec., 1932
CRUDE PETROLEUM:						
Runs to stills	70,440	2,272	68,461	2,282	861,254	819,997
MOTOR FUEL:						
Production	32,304	1,042	33,074	1,102	408,284	399,712
Imports	1	.....	1	.....	12	8,205
Bonded warehouses	.....	.....	.....	.....	2	13
For domestic use	1	.....	1	.....	10	8,192
Exports*	1,649	53	2,905	97	29,186	35,438
Stocks, gasoline	52,240	.....	50,432	.....	52,240	50,602
Stocks, natural gasoline	3,186	.....	3,125	.....	3,186	3,203
Domestic demand	28,787	929	30,262	1,009	378,143	373,900
KEROSENE:						
Production	4,289	138	4,006	134	48,921	43,836
Imports	.....	.....	.....	.....	.....	71
Exports	868	28	1,049	35	8,960	11,044
Stocks	6,495	.....	7,217	.....	6,495	4,974
Domestic demand	4,143	134	3,726	124	38,440	33,221
GAS OIL AND FUEL OIL:						
Production	25,411	820	24,764	825	313,811	294,750
Transfers†	803	26	631	21	7,185	6,603
Imports	792	26	956	32	13,217	21,286
Bonded warehouses	584	19	677	23	7,062	1,888
For domestic use	208	7	279	9	6,155	19,398
Exports	2,407	78	1,615	54	20,369	19,994
Stocks	122,287	.....	128,215	.....	122,287	129,981
Domestic demand	30,527	985	29,797	993	321,395	308,157
Railroad (Class I)‡	(§)	(§)	3,610	120	¶36,776	¶37,984
Pub. util. power plants‖	951	31	**914	30	9,900	7,967
Other	(§)	(§)	(§)	(§)	274,719	262,206
Bunker oil	3,656	86	1,474	49	31,623	37,395
LUBRICANTS:						
Production	2,212	71	2,375	79	23,805	22,433
Imports	.....	.....	.....	.....	.....	12
Exports	734	23	538	18	8,218	6,851
Stocks	6,894	.....	7,075	.....	6,896	8,465
Domestic demand	1,667	54	1,538	51	17,066	16,614
WAX (thous. of lbs.):						
Production	41,720	1,346	43,680	1,456	469,560	458,920
Imports	6,779	219	3,721	124	36,855	33,255
Bonded warehouses	157	5	277	9	1,610	952
For domestic use	6,622	214	3,444	115	35,245	32,303
Exports	19,555	631	19,043	635	247,938	235,304
Stocks	68,833	.....	72,751	.....	68,833	163,628
Domestic demand	32,862	1,060	31,410	1,047	353,272	264,463
COKE (short tons):						
Production	128,600	4,148	117,600	3,920	1,576,000	1,788,800
Stocks	727,400	.....	760,300	.....	727,400	1,330,200
ASPHALT (short tons):						
Production	151,000	4,871	156,300	5,210	2,220,000	2,474,900
Imports (natural)	4,000	129	800	27	21,600	20,480
Stocks	254,500	.....	258,900	.....	254,500	276,100

*Includes benzol, 16,014 bbls. in December, 1933. †Net transfers in California. ‡Interstate Commerce Commission. §Not available. ¶January-November. ‖U. S. Geological Survey. **Revised.

INDICATED DOMESTIC DEMAND FOR CRUDE PETROLEUM

(Thousands of barrels of 42 gallons)

Domestic petroleum by fields of origin:	December, 1933 Total	December, 1933 Daily av.	November, 1933 Total	November, 1933 Daily av.	Jan.-Dec., 1933	Jan.-Dec., 1932
Appalachian:						
Pennsylvania Grade	1,954	63	1,897	63	22,573	21,178
Other (inc. Kentucky)	424	14	440	15	4,342	8,452
Lima-N. E. Ind.-Mich.	900	29	875	30	8,376	8,544
Ill.-S. W. Ind.	386	12	312	11	5,079	4,047
Mid-Continent:						
N. La. and Ark.	1,967	63	1,556	52	22,892	27,069
W. Texas-S.E. N. Mex.	5,201	168	4,788	160	72,806	78,264
East Texas	14,590	471	16,189	540		
Other (Okla., Kans., N. Tex., etc.)	24,449	788	24,074	803	477,278	419,227
Gulf Coast	6,732	217	5,876	196	76,664	55,284
Rocky Mountain	1,116	36	1,203	40	14,953	14,781
California	14,255	460	13,474	446	167,367	176,311
Total demand	71,974	2,321	70,684	2,356	874,339	812,157
Exports	2,709	87	3,305	110	36,702	27,393
Domestic demand	69,265	2,234	67,379	2,246	837,636	784,764
Foreign petroleum	2,632	85	2,164*	72	36,119	42,572
Total domestic demand	71,897	2,319	69,543	2,318	873,745	827,336

PRODUCTION OF CRUDE PETROLEUM BY STATES AND PRINCIPAL FIELDS

(Thousands of barrels of 42 gallons)

	December, 1933 Total	December, 1933 Daily av.	November, 1933 Total	November, 1933 Daily av.	Jan.-Dec., 1933	Jan.-Dec., 1932*
Arkansas	942	30	939	31	11,608	12,061
California:						
Kettleman Hills	1,656	54	1,468	49	21,627	21,961
Long Beach	1,896	61	1,742	58	24,797	27,436
Santa Fe Springs	1,307	42	1,144	38	18,271	22,538
Rest of State	9,867	318	9,580	319	108,390	106,193
Total California	14,726	475	13,934	464	173,085	178,128
Colorado	77	3	79	3	947	1,136
Illinois	378	12	388	13	4,227	4,673
Indiana:						
Southwestern	69	2	73	2	721	777
Northeastern	.....	.....	.....	.....	7	29
Total Indiana	69	2	73	2	728	806
Kansas	3,470	112	3,648	122	41,942	34,848
Kentucky	385	12	388	13	4,605	6,287
Louisiana:						
Gulf Coast	1,358	44	1,428	47	15,088	11,616
Rest of State	768	25	736	25	9,548	10,191
Total Louisiana	2,126	69	2,163	72	24,636	21,807
Michigan	945	30	929	31	7,851	6,910
Montana	199	6	208	7	2,122	2,457
New Mexico	1,277	41	1,268	42	14,974	12,455
New York	298	10	279	9	3,174	3,508
Ohio:						
Central and Eastern	255	8	267	9	3,238	3,579
Northwestern	79	3	79	3	1,026	1,065
Total Ohio	334	11	346	12	4,264	4,644
Oklahoma:						
Oklahoma City	5,932	191	5,952	199	68,461	33,807
Seminole	3,308	107	3,279	109	41,220	42,911
Rest of State	5,968	193	5,789	193	71,825	76,526
Total Oklahoma	15,208	491	15,020	501	181,506	153,244
Pennsylvania	1,077	35	1,090	36	12,639	12,412
Tennessee	.....	.....	1	.....	6	5
Texas:						
Gulf Coast	4,373	157	4,434	148	60,300	41,850
West Texas	3,931	126	3,695	123	55,375	63,335
East Texas	13,901	449	13,398	447	199,298	121,449
Rest of States	6,619	214	6,258	208	81,480	85,844
Total Texas	29,324	946	27,785	926	396,453	312,478
West Virginia	326	11	334	11	3,811	3,876
Wyoming:						
Salt Creek	558	18	524	18	7,000	8,006
Rest of State	341	11	360	12	4,196	5,412
Total Wyoming	899	29	884	30	11,196	13,418
Total United States	72,060	2,325	69,755	2,325	898,874	785,159

*Includes Alaska, Missouri, and Utah.

PRODUCTION OF CRUDE PETROLEUM BY DISTRICTS

(Thousands of barrels of 42 gallons)

	December, 1933 Total	December, 1933 Daily av.	November, 1933 Total	November, 1933 Daily av.	Jan.-Dec., 1933	Jan.-Dec., 1932
Appalachian:						
Pennsylvania Grade	1,825	59	1,836	61	21,214	21,520
Other (inc. Kentucky)	516	17	523	17	6,259	8,147
Lima-N. E. Ind.-Mich.	1,024	33	1,008	34	8,884	8,004
Ill.-S. W. Ind.	447	14	460	15	4,948	5,450
Mid-Continent:						
No. La. and Ark.	1,710	55	1,674	56	21,156	22,242
W. Texas-S. E. New Mex.	5,176	166	4,913	164	69,056	75,397
East Texas	13,901	449	13,398	447	199,298	121,449
Other (Okla., Kans., N. Tex., etc.)	25,297	817	24,926	831	304,928	273,946
Gulf Coast	6,231	201	5,862	195	75,388	53,466
Rocky Mountain	1,207	39	1,216	41	14,658	17,410
California	14,726	475	13,934	464	173,085	178,128
Total	72,060	2,325	69,755	2,325	898,874	785,159

STOCKS OF CRUDE PETROLEUM BY GRADES

(Thousands of barrels of 42 gallons)

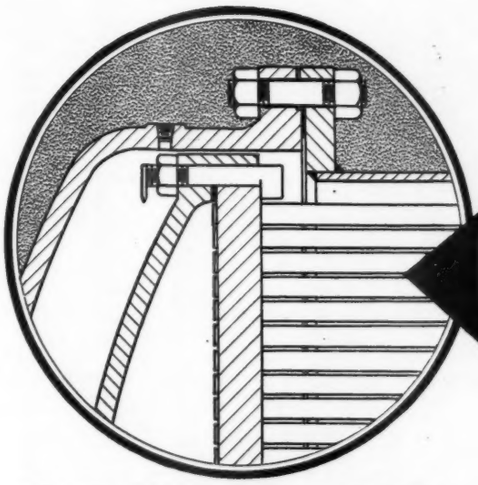
	Dec. 31, 1933	Nov. 30, 1933	Dec. 31, 1932
At refineries by location:			
East Coast: Domestic	9,556	9,708	7,604
Foreign	3,416	2,052	5,405
Appalachian	1,875	1,943	2,250
Indiana, Illinois, Kentucky, Michigan	4,554	4,262	3,443
Oklahoma, Kansas, and Missouri	6,223	6,174	4,589
Texas: Inland	2,296	2,448	1,490
Gulf Coast: Domestic	12,683	11,867	5,882
Foreign	102	24	83
Louisiana Gulf Coast: Domestic	3,274	3,342	3,298
Foreign	538	491	1,116
Arkansas and Inland Louisiana	1,027	1,022	445
Rocky Mountain	12,505	12,504	12,211
California	9,001	8,609	10,347
Total	66,049	64,446	58,163
At refineries by origin:			
Pennsylvania Grade	1,699	1,851	2,107
Other Appalachian (inc. Kentucky)	604	547	623
Lima-N. E. Indiana-Michigan	489	423	209
Illinois-S.W. Indiana	120	117	104
N. Louisiana and Arkansas	2,515	2,602	2,240
West Texas and S. E. New Mexico	4,014	3,904	3,871
East Texas	9,609	8,324	15,482
Oklahoma, Kansas, N. Texas, etc.	17,441	17,918	
Gulf Coast	5,015	5,098	4,410
Rocky Mountain	12,487	12,486	12,164
California	9,001	8,609	10,347
Foreign	3,055	2,567	6,604
Total	66,049	64,446	58,163
Pipe line and tank farm:			
Pennsylvania Grade	3,882	3,861	4,859
Other Appalachian (inc. Kentucky)	827	793	903
Lima-N. E. Indiana-Michigan	1,280	1,240	1,069
Illinois-S. W. Indiana	11,061	11,005	11,210
N. Louisiana and Arkansas	9,359	9,521	11,662
West Texas and S. E. New Mexico	28,766	28,887	32,101
East Texas	36,562	38,496	156,849
Oklahoma, Kansas, N. Texas, etc.	137,200	135,798	
Gulf Coast	11,023	11,436	12,130
Rocky Mountain	15,056	14,884	15,573
California	26,192	26,790	28,993
Total	281,214	282,711	275,349
Lease (producers') stocks	8,131	8,457	*6,203
Total refinable crude in the United States	355,394	355,614	339,715

*East of California only.

CRACKED OPERATIONS

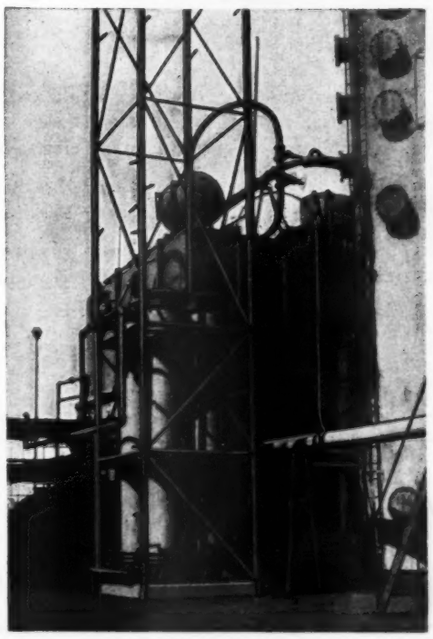
Fresh cracking stock charged to stills 34,362,000 bbls.; gasoline produced by cracking 14,278,000 bbls.; fuel oil produced by cracking 13,546,000 bbls.

a NEW and Superior



FLOATING HEAD JOINT

(Patent No. 1,895,735)



GONE are floating head leaks due to warping of split ring construction through uneven bolting strains!

Vogt alloy steel "L head" bolts, with supported shanks and index heads, make full bearing under the tube sheet certain and hold the gasket tight. They can't be mislaid or replaced with inferior bolts because they need not be removed from the head cover.

Higher operating efficiencies result from a closer fit between the tube bundle and shell and a reduction of ineffective surface by bringing the floating head nearer the shell flange.

Let us tell you more about the advantages of Vogt heat exchanger design and construction.

HENRY VOGT MACHINE CO.
INCORPORATED
LOUISVILLE, KY.

New York Chicago Cleveland Philadelphia Dallas

Manufacturers of: Heat Exchangers, Water Tube Boilers, Drop Forged Steel Valves and Fittings, Oil Refinery Equipment, Ice Making and Refrigerating Machinery

Vogt HEAT Exchangers

STOCKS OF CRUDE PETROLEUM BY STATES AND BY LOCATION

(Thousands of barrels of 42 gallons)

	December 31, 1933				November 30, 1933			
	Refinery	Pipe line	Lease	Total	Refinery	Pipe line	Lease	Total
Arkansas	668	4,618	377	5,663	697	4,743	382	5,822
California	9,001	26,192	1,775	36,968	8,609	26,790	1,892	37,291
Colorado	235	63	19	317	201	60	19	280
Georgia*	596	.....	.....	596	363	.....	.....	363
Illinois	1,282	10,555	115	11,952	1,215	10,260	113	11,588
Indiana	1,437	2,000	8	3,445	1,305	1,767	8	3,080
Kansas	1,862	12,685	374	14,921	1,751	12,757	391	14,899
Kentucky†	525	563	73	1,161	485	521	72	1,078
Louisiana‡	4,171	8,218	207	12,596	4,158	8,812	211	13,181
Maryland	1,123	.....	.....	1,123	1,051	.....	.....	1,051
Massachusetts§	1,152	.....	.....	1,152	1,018	.....	.....	1,018
Michigan	290	733	67	1,090	215	696	49	960
Missouri¶	151	3,329	.....	3,480	153	3,317	.....	3,470
Montana	222	322	79	623	248	305	67	620
New Jersey	4,910	340	.....	5,250	5,083	310	.....	5,393
New Mexico	9	247	181	437	9	245	176	430
New York	1,893	97	17	2,007	1,967	118	17	2,102
Ohio	1,191	7,577	117	8,885	1,184	7,504	116	8,804
Oklahoma	4,210	78,180	1,639	84,029	4,270	77,948	1,719	83,937
Pennsylvania	3,939	1,853	96	5,888	4,040	1,701	95	5,836
Texas	15,081	106,771	2,550	124,402	14,339	108,241	2,600	125,180
Utah	270	.....	.....	270	314	.....	.....	314
West Virginia	62	2,231	127	2,420	39	2,139	127	2,305
Wyoming‖	11,769	14,640	310	26,719	11,732	14,477	403	26,612
Total United States	66,049	281,214	8,131	355,394	64,446	282,711	8,457	355,614

*Includes South Carolina and Virginia. †Includes Tennessee. ‡Includes Alabama. §Includes Rhode Island. ¶Includes Iowa. ‖Includes Nebraska and South Dakota.

SHIPMENTS FROM CALIFORNIA TO EASTERN PORTS IN THE UNITED STATES*

(Thousands of barrels of 42 gallons)

	Dec., 1933	Nov., 1933	Dec., 1932	Jan.-Dec., 1933	Jan.-Dec., 1932
Gasoline	563	844	445	11,306	8,396
Natural gasoline	....	73	73	154	515
Kerosene	347	183	104	1,732	510
Gas oil and Diesel oil	534	261	420	2,450	2,063
Fuel oil	1,036	1,718	....	5,119	277
Lubricants	2	10	8	51	45
Asphalt	2	1	....	4	6
Miscellaneous	15	16	1	204	164
Total	2,499	3,106	1,051	21,020	12,036

*Compiled by E. T. Knudsen of the San Francisco office of the Bureau of Mines.

NUMBER OF WELLS COMPLETED IN THE UNITED STATES*

	Dec., 1933	Nov., 1933	Dec., 1932	Jan.-Dec., 1933	Jan.-Dec., 1932
Oil	903	992	793	8,068	10,444
Gas	93	107	88	932	1,027
Dry	353	276	319	3,312	3,569
Total	1,349	1,375	1,200	12,312	15,040

*From The Oil and Gas Journal and California office of the American Petroleum Institute.

RECORD OF WELLS FOR IMPORTANT FLUSH FIELDS, 1933*

	Completions			Total initial production (bbls.)	Av. initial production (bbls.)
	Oil	Gas	Dry		
Texas	4,745	140	1,674	6,508,330	1,370
East Texas	2,407	4	56	4,849,500	2,020
Gulf Coast	1,303	26	303	1,342,716	1,300
Conroe	586	6	23	1,048,800	1,790
Greta	87	1	6	42,000	480
West Texas	237	3	58	67,100	280
California	248	....	....	274,100	1,110
Kettleman Hills	22	....	....	101,900	4,630
Long Beach	50	....	10	10,800	220
Huntington Beach	51	....	....	88,400	1,730
Oklahoma	668	72	353	307,300	460
Oklahoma County	64	3	3	118,800	1,860
Pottawatomie and Seminole Counties	113	....	30	74,500	660
New Mexico	45	1	15	148,900	3,310
Lea County (Hobbs)	32	....	4	148,300	4,630
Other states	2,362	719	1,107	470,294	200
Total United States	8,068	932	3,312	7,708,924	960

*From The Oil and Gas Journal and California office of the American Petroleum Institute.

RUNS TO STILLS AND OUTPUT OF REFINERIES, DECEMBER, 1933

(Thousands of barrels of 42 gallons)

INPUT—	Crude oil			Unfinished oils rerun	Natural gasoline	Total input
	Domestic	Foreign	Total			
East Coast	11,257	2,485	13,742	978	178	14,898
Appalachian	2,673	....	2,673	392	27	3,092
Ind., Ill., Ky., etc.	8,881	....	8,881	250	170	9,301
Okla., Kans., Mo.	6,983	....	6,983	436	361	7,780
Texas Inland	4,877	....	4,877	107	343	5,327
Texas Gulf	14,056	50	14,106	339	166	14,611
Louisiana Gulf	3,247	79	3,326	51	30	3,407
Ark. and La. Inland	1,485	....	1,485	375	29	1,889
Rocky Mountain	1,093	....	1,093	45	69	1,207
California	13,274	....	13,274	162	*809	14,245
Total	67,826	2,614	70,440	3,135	2,182	75,757

OUTPUT—	Gasoline	Kerosene	Gas oil and distillate fuels	Residual fuel oil	Lubricants	Wax (thou. lbs.)
East Coast	5,589	795	1,414	3,679	734	19,600
Appalachian	1,309	245	247	380	437	6,160
Ind., Ill., Ky., etc.	4,777	352	702	1,379	161	3,640
Okla., Kans., Mo.	4,001	402	546	1,566	258	3,080
Texas Inland	2,628	289	216	1,570	23	280
Texas Gulf	5,632	1,179	1,637	3,307	424	3,640
Louisiana Gulf	1,332	421	356	926	31	6,440
Ark. and La. Inland	691	58	131	491	2	....
Rocky Mountain	568	48	59	217	5	1,120
California	5,058	500	1,944	5,447	147	....
Total	†31,685	4,289	7,252	18,962	2,212	41,720

OUTPUT—	Coke (tons)	Asphalt (tons)	Road oil	Still gas	Miscellaneous	Unfinished products	Shortage
East Coast	13,800	59,800	4	692	36	1,275	112
Appalachian	2,000	3,800	4	167	29	125	96
Ind., Ill., Ky., etc.	51,400	31,800	43	734	23	602	83
Okla., Kans., Mo.	20,200	4,200	23	353	19	190	287
Texas Inland	3,000	....	9	88	4	224	260
Texas Gulf	24,800	12,900	34	857	2	1,122	209
Louisiana Gulf	4,200	8,000	1	153	....	66	33
Ark. and La. Inland	200	8,700	32	43	5	331	56
Rocky Mountain	6,800	200	38	57	3	162	31
California	2,200	22,000	72	413	21	474	37
Total	128,600	151,000	260	3,557	142	4,571	1,204

*Includes 126,000 bbls. run through pipe lines. †Includes 422,000 bbls. special naphthas.

STOCKS HELD BY REFINING COMPANIES, DECEMBER 31, 1933

(Thousands of barrels of 42 gallons)

	Gasoline					
	At refineries	Bulk and pipe lines	Total	Kerosene	Gas oil and distillate fuels	Residual fuel oils
East Coast	5,271	10,038	15,309	1,256	3,842	3,599
Appalachian	1,451	1,030	2,481	345	487	400
Ind., Ill., Ky., etc.	3,657	4,229	7,886	634	2,288	2,202
Okla., Kans., Mo.	3,851	2,242	6,093	696	1,324	3,208
Texas Inland	1,559	272	1,831	165	380	2,227
Texas Gulf	4,281	388	4,669	1,343	2,878	3,437
Louisiana Gulf	1,274	357	1,631	454	1,454	1,488
Ark. and La. Inland	193	218	411	13	231	907
Rocky Mountain	973	.....	973	241	193	380
California	7,085	3,871	10,956	1,348	3,535	87,826
Total	29,595	22,645	52,240	6,495	16,612	105,675

	Wax (thousands of lbs.)				
	Lubricants	Crude scale	Refined	Total	Coke (tons)
East Coast	2,147	7,259	11,230	18,489	27,000
Appalachian	876	10,559	2,183	12,742	4,700
Ind., Ill., Ky., etc.	688	8,739	1,738	10,477	93,200
Okla., Kans., Mo.	521	2,414	1,049	3,463	102,500
Texas Inland	80	204	.....	204	80,000
Texas Gulf	1,526	1,821	8,241	10,062	206,100
Louisiana Gulf	62	3,435	643	4,078	8,900
Ark. and La. Inland	18	.....	.....	.....	.....
Rocky Mountain	133	7,966	1,352	9,318	105,800
California	845	.....	.....	.....	99,200
Total	6,896	42,397	26,436	68,833	727,400

	Asphalt (tons)	Road oil	Miscellaneous products	Unfinished oils	Natural gasoline
East Coast	83,200	92	81	7,571	153
Appalachian	6,600	22	43	1,631	1
Ind., Ill., Ky., etc.	61,200	41	12	7,658	52
Okla., Kans., Mo.	6,400	172	25	4,635	36
Texas Inland	.....	24	5	1,594	7
Texas Gulf	7,300	31	11	12,172	117
Louisiana Gulf	22,100	14	....	1,947	....
Ark. and La. Inland	19,200	29	1	452	7
Rocky Mountain	2,500	212	6	2,553	5
California	46,000	195	204	*8,239	2,149
Total	254,500	832	388	48,452	2,527

*Includes 4,641,000 bbls. crude gasoline.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, DECEMBER, 1933

(Thousands of barrels of 42 gallons)

	Straightrun			Cracked			Nat. gaso.		Gasoline	
		Per cent			Per cent			Per cent		Per cent
	Total	(*)	(†)	Total	(*)	(†)	Total	(†)	Total	(*)
East Coast	2,736	19.9	48.1	2,775	20.2	48.8	178	3.1	5,689	40.1
Appalachian	652	24.4	49.8	630	23.6	48.1	27	2.1	1,309	48.0
Ind., Ill., etc.	1,939	21.8	40.6	2,668	30.1	55.8	170	3.6	4,777	51.9
Okla., Kans., Mo.	1,785	25.5	44.6	1,855	26.6	46.4	361	9.0	4,001	52.1
Texas Inland	1,597	32.8	60.8	688	14.1	26.2	343	13.0	2,628	46.9
Texas Gulf	2,477	17.5	44.0	2,989	21.2	52.1	166	2.9	5,632	38.7
Louisiana Gulf	696	20.9	52.3	606	18.2	45.5	30	2.2	1,332	39.1
Ark. and La. Inland	318	21.4	46.0	344	23.2	49.8	29	4.2	691	44.6
Rocky Mountain	256	23.4	45.1	243	22.3	42.8	69	12.1	568	45.7
California	2,769	20.9	54.7	1,480	11.1	29.3	809	16.0	5,058	32.0
Total	15,225	21.6	48.0	14,278	20.3	45.1	2,182	6.9	31,685	41.9

*Per cent of crude run. †Per cent of total gasoline output.

SHIPMENTS OF MOTOR FUEL BY PIPE LINES

(Thousands of barrels of 42 gallons)

	Dec., 1933	Nov., 1933	Dec., 1932	Jan.-Dec., 1933	Jan.-Dec., 1932
Motor fuel turned into lines	3,408	3,866	2,331	38,417	29,901
Motor fuel delivered from lines	3,417	3,692	2,479	38,196	29,573
Shortage	21	14	7	104	92
Stocks in lines and working tanks end of month	1,315	1,345	1,198	1,315	1,198

RECEIPTS OF CRUDE PETROLEUM ON THE ATLANTIC SEABOARD

(Thousands of barrels of 42 gallons)

Domestic:	Dec., 1933	Foreign:	Dec., 1933
Pennsylvania Grade	277	Venezuela	1,641
West Texas-S.E. New Mex.	1,966	Colombia	533
East Texas	4,807	Mexico	612
Other Mid-Continent	1,697	Ecuador	78
Gulf Coast	2,367		
			*2,864
Total	11,114	Total	13,978

*In addition, 256,000 bbls. received into the Gulf district from Mexico.

IMPORTANT BOOKS
for the Oil Man's Library

"CHEMICAL GUIDEBOOK"

The petroleum industry is making use of more and varied chemicals each day, including treating chemicals, special solvents for wax extraction and the preparation of lubricating oils, gum and color inhibitors, and dyes for coloring gasoline.

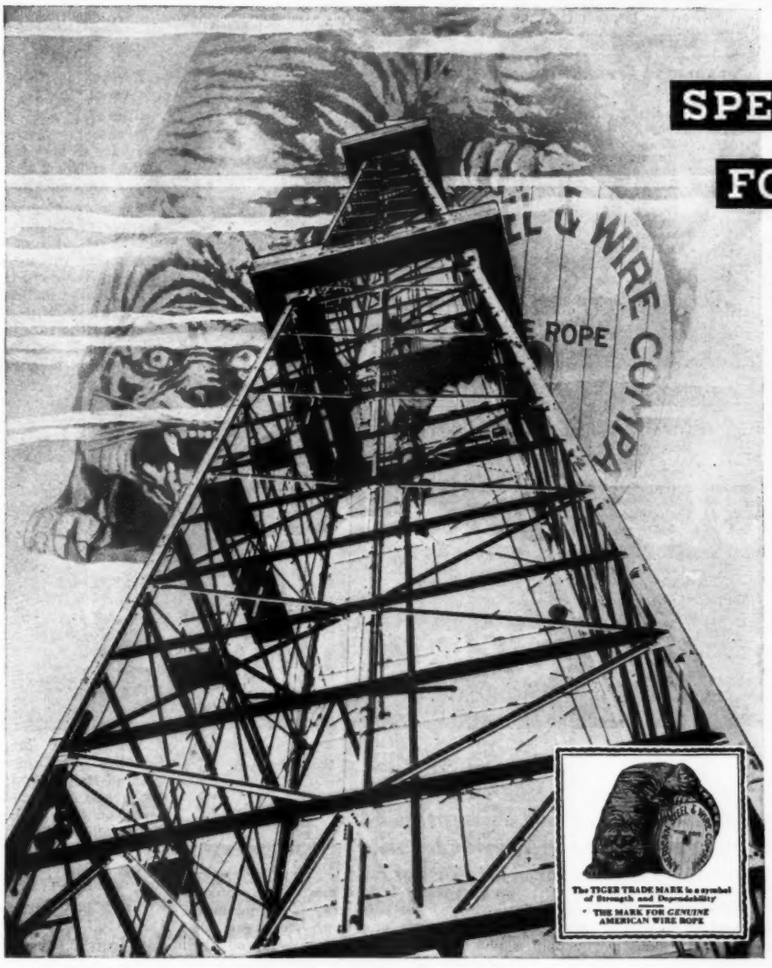
This book, of 600 pages, tells what they are and who sells them. In it you will find alphabetically arranged 1,257 chemicals, under each one is the chemical name with all its trade and scientific synonyms, chemical formula, physical description with specific gravity, boiling point, solubility, commercial use, and the nature of the containers in which it is shipped. With this detailed description is a complete list of all the responsible firms who sell the chemical indicated.

This book will be found valuable by executives, purchasing agents, plant managers, superintendents, research directors, chemists, technologists, salesmanagers, salesmen, and students. It is the most useful book of its kind with which we are familiar, the data being complete and conveniently arranged.

"Chemical Guidebook" may be purchased through the Book Department of The Oil and Gas Journal at the regular postpaid price of $2, payable by check or money order before book is mailed.

(This review, printed in 1933, is reprinted for the benefit of new subscribers.)

WHAT'S BACK OF WIRE ROPE IS VITAL



SPECIAL LINES FOR ANY JOB

NOTHING can replace experience in the drilling of a well. And—only experience can produce Wire Lines that most efficiently and economically meet every requirement of the driller. It is this background of wire making experience—over 100 years of it—that causes a great majority of operators to turn to the American Steel & Wire Company for lines of special size, construction and grade—lines to meet specific and unusual conditions. Whatever your need, ordinary or special, whether it be Cable Tool or Rotary Drilling Lines—or for Bailing, Sucker Rods, Tubing, Casing or Pumping Lines—here you will find unequalled quality and the most helpful type of engineering service.

AMERICAN
STEEL & WIRE COMPANY
WIRE LINES

1831 — MORE THAN 100 YEARS OF PROGRESS IN WIRE MAKING — 1934

AMERICAN STEEL & WIRE COMPANY

208 South La Salle Street, Chicago
94 Grove Street, Worcester

SUBSIDIARY OF UNITED STATES STEEL CORPORATION
AND ALL PRINCIPAL CITIES

Empire State Bldg., New York
First National Bank Bldg., Baltimore

Pacific Coast Distributors: Columbia Steel Company, Russ Building, San Francisco
Export Distributors: United States Steel Products Company, New York

Corrosion Resisting Malleable Iron Now Finding Many Uses in All Branches of Oil Industry

By REBECCA HALL
Consulting Metallurgist, Lakeside Malleable Castings Co., Racine, Wis.

The greater part of the malleable iron produced in this country frequently encounters corrosion of different types. It has been suggested that the main sorts of corrosion to which malleable iron is exposed are atmospheric, locomotive smoke, and acid mine water. Experience shows other kinds of corrosive attack also; notably sulphuric acid conditions in oil refineries, pickling tanks, food plants where sulphur dioxide is used for bleaching, etc.; acetic acid corrosion, as in tank lugs for silos; brine corrosion, on fittings for refrigerator cars, and on marine vessels and structures.

In many cases the use of protective coatings such as paint and metallic coverings (zinc or cadmium) is sufficient to insure staisfactory service. In others, where a condition of erosion or abrasion renders such a procedure inadequate, there is a real need for an iron having some of the good engineering properties possessed by standard malleable, and yet having also a high degree of resistance to chemical attack. There are even instances where an iron of this type, further protected by painting, galvanizing or cadmium plating, is highly desirable.

Corrosion problems are particularly acute in the oil industry, for several reasons. First, some crudes contain sulphur, which produces a severely corrosive condition. Second, in many installations erosion or abrasion is present in addition to corrosion, so that the material used for such equipment must be not only resistant to corrosion, but also strong, hard and resistant to wear. Third, high temperatures add another complicating factor. Fourth, the magnitude of the industry and the present economic situation make price an important feature of the materials used.

Some of the nonferrous metals which are used extensively in oil field work give trouble because of electrolytic corrosion. Malleable iron bolts were used at one time in the transmission and distribution lines, to get away from the above defect, but they had an equally serious fault. Because of their low yield point, operators in the field would frequently twist the heads off the malleable iron bolts when tightening them. Gray iron is used to some extent in oil work, but tends to grow after repeated heatings, so is not generally applicable.

Survey of Problems

In developing a corrosion-resistant iron, the problems of the oil industry were kept in mind, and an attempt was made to perfect an iron which would meet those specific difficulties in service. A survey of the technical literature was made, to ascertain if there was any information on a malleable iron with a high degree of resistance to corrosion. Failing to find this, the matter was approached from another angle, by producing a corrosion-resistant iron which had some of the characteristics of malleable iron, and could be used in many of the same castings.

When this new material was perfected, it was found to have very high strength and moderate ductility. A series of tests were run to determine the difference in corrosion resistance between standard malleable iron and this new iron, which is called Lakalloy No. 7. It is not a malleable iron, for it has a white fracture instead of a black one, and an entirely different microstructure; but since the new material is similar to malleable in both use and price, they have been compared as to resistance to acid.

The average physical properties of the specimens tested are as follows:

Iron—	Tensile strength	Yield point	Per cent elongation	Brinell No.
Malleable	55,000	32,500	16	145
No. 7	75,000	45,000	7.5	200

The average chemical composition of the malleable iron is: Carbon, 2.40; silicon, 0.97; manganese, 0.29; sulphur, 0.076; and phosphorus, 0.120.

The corrosion tests run were immersion tests in specific corroding media, including sulphuric, hydrochloric, nitric, and acetic acids. Specimens were used both in the rough (or as cast) condition and machined. The samples were taken as nearly the same size, shape and surface exposed as possible, so that the results would be truly indicative of the nature of the metal. However, different kinds of castings, such as bolts, washers, discs, etc., were also used in an attempt to obtain laboratory results which would be clearly applicable to actual service conditions. Therefore, the results are expressed both in the conventional form of loss in grams per square centimeter surface per 24 hours, and as percentage loss of total weight. Corrosion products were often removed, to prevent the formation of an exterior protective coating, and reagents were kept up to strength. Tests were conducted at room temperature.

Sulphuric Acid

Since sulphuric acid conditions are found in many industries, and they present one of the most interesting problems in oil work, this medium was chosen for the first tests. It is a matter of common knowledge that both gray iron and malleable iron are unable to withstand the attack of dilute sulphuric acid, so the resistance of No. 7 to this reagent is particularly important. Preliminary tests gave evidence of such a startling nature that a number of samples were placed in sulphuric acid under slightly varying conditions, with the results shown in Table 1.

TABLE 1—AVERAGE LOSS IN SULPHURIC ACID

Strength of acid	Section of sample	Condition of sample	Duration in days	Loss in Gm/Cm²/24 hrs. M	Loss in Gm/Cm²/24 hrs. No. 7	Loss in per cent weight M	Loss in per cent weight No. 7
3%	½"	Rough	4	.088	.012	44.7	5.8
3%	½"	Rough	8	.072	.007	95.8	8.1
3%	½"	Rough	13	....	.004	....	12.7
6%	¼" to ½"	Rough	9	.150	.016	74.3	8.1
6%	½"	Rough	15	.015	.004	13.0	4.0
6%	½"	Rough	30	.045	.005	77.7	10.0
10%	½"	Machined	5	.215	.019	51.3	4.6
10%	½"	Machined	12	.160	.013	92.3	8.1
96%	½"	Machined	5	.0002	.0002	.06	.05
96%	½"	Machined	12	.0005	.0002	.35	.15

TABLE 2—AVERAGE LOSS IN HYDROCHLORIC ACID

Strength of acid	Section of sample	Condition of sample	Duration in days	Loss in Gm/Cm²/24 hrs. M	Loss in Gm/Cm²/24 hrs. No. 7	Loss in per cent weight M	Loss in per cent weight No. 7
10%	½"	Rough	21	.0492	.0047	65.3	6.7
10%	½"	Machined	12	.1369	.0214	82.8	12.1
37%	½"	Machined	13	.0482	.0269	27.9	16.3

TABLE 3—AVERAGE LOSS IN NITRIC ACID

Strength of acid	Section of sample	Condition of sample	Duration in days	Loss in Gm/Cm²/24 hrs. M	Loss in Gm/Cm²/24 hrs. No. 7	Loss in per cent weight M	Loss in per cent weight No. 7
10%	¼" to ½"	Rough	25	.0184	.0150	38.4	32.7
10%	½"	Machined	12	....	.0714	100.0	44.4
70%	½"	Machined	12	.0025	.0020	1.5	1.3

TABLE 4— AVERAGE LOSS IN ACETIC ACID

Strength of acid	Section of sample	Condition of sample	Duration in days	Loss in Gm/Cm²/24 hrs. M	Loss in Gm/Cm²/24 hrs. No. 7	Loss in per cent weight M	Loss in per cent weight No. 7
18%	½"	Rough	2	.0047	.0030	0.7	0.3
			4	.0030	.0025	1.0	0.8
			7	.0015	.0021	1.7	1.3
			10	.0025	.0024	1.9	1.7
			12	.0025	.0020	2.2	2.0
			14	.0020	.0016	2.2	2.0
			19	.0020	.0013	3.2	2.2
			22	.0021	.0013	4.0	2.5
			24	.0021	.0013	4.5	3.1
			26	.0020	.0012	4.9	3.1
			28	.0020	.0012	6.0	3.4
			31	.0020	.0011	6.3	3.4
			37	.0019	.0009	7.1	3.5
			45	.0017	.0009	7.9	3.9
			56	.0016	.0007	8.9	4.3
			58	.0015	.0007	10.9	5.4
			92	.0016	.0007	14.5	6.6
			100	.0017	.0007	16.8	7.3
18%	½"	Machined	12	.0056	.0051	2.6	2.9

Casting Skin Important

As might be expected, it was found in this test that the casting skin was of great importance to the corrosion resistance of malleable iron. In the case of the No. 7 specimens there was no apparent difference in rate or extent of corrosion between the rough and machined samples.

There is one point which had great influence on both malleable iron and No. 7: the presence of slag inclusions, pin holes, etc., in the surface of the casting. Naturally, such imperfections offer easy ingress for oxidizing media. In the case of No. 7, it was observed that an evenly machined surface was better in sulphuric acid than a rough surface with pin holes and other defects. This does not hold true for malleable iron. In several instances it was noticed that the malleable iron stood up almost as well as the No. 7 at first, until the acid had eaten through the outer skin; then the remainder of the specimen would be quickly destroyed.

Hydrochloric Acid

Hydrochloric acid attacks both malleable and No. 7 severely. The long-time test, however, showed conclusively the difference in resistance to this type of corrosion.

The results in Table 2 show that in this case the casting skin is of great importance to both kinds of iron, as the corrosion of No. 7 is doubled when the specimens are machined.

An interesting point is brought out by a study of the results of the 21-day test, considered as loss in grams per square centimeter surface per 24 hours. After four or five days in the acid the casting skin of the malleable iron specimen is eaten away with a sudden marked increase in the rate of corrosion. For Lakalloy No. 7, on the other hand, the rate of corrosion becomes less as time goes on.

It is clear from Table 3 that neither metal is suitable for use where exposed to dilute nitric acid. However, it is interesting to note that while in the rough, or "as cast" condition, the malleable samples stand up as well as the No. 7, when they are machined the malleable is quickly eaten entirely away.

Acetic Acid

Tests in acetic acid were conducted for a much longer period than those in any other media, because of the slow action of this acid. The results of a 90-day test are given in Table 4 and show how the difference between the two metals becomes more apparent with the duration of the test.

Conclusion

Applications for the new material, Lakalloy No. 7, have been chosen on the basis of its physical and mechanical properties and its resistance to the type of corrosion encountered in service. The results indicated by the laboratory tests given above—that No. 7 would be particularly good in sulphuric acid conditions, for instance—have been borne out in practice.

Officers Are Promoted by Parkersburg Rig and Reel

At the annual meeting of the Parkersburg Rig & Reel Co., held February 13, in Parkersburg, W. Va., John M. Crawford retired as president to become chairman of the board. H. J. Lockhart, former vice president and general manager, succeeds Mr. Crawford as president. Casper A. Ruf, former assistant general manager, succeeds Mr. Lockhart as vice president.

The retiring president, Mr. Crawford, has spent 50 years in the oil industry, beginning with his employment in the machine shop of Bovaird & Seyfang, Bradford, Pa., in 1884. In 1891 he was moved to the Pittsburgh territory, opening stores for Bovaird & Seyfang in Carnegie, Oakdale and McDonald, Pa. In 1897 Mr. Crawford organized the Parkersburg Rig & Reel Co. which has grown to be an important factor in the oil and gas well equipment industry. He has been its directing head since its found- succeeds Mr. Lockhart as vice president, presidency, has been connected with the company since 1917 as vice president and general manager. Casper A. Ruf, who succeeds Mr. Loskhart as vice president, has served the company since 1919 in various capacities. David B. Crawford, having handled the financial affairs of the corporation throughout all the years of his connection with it, will continue through preference as secretary and treasurer.

Symbols of Quality– Producers of Profit

THIS emblem . . . the famous black and white emblem of Cities Service . . . means two definite things to you.

In the first place the consumer acceptance of Cities Service makes for easier sales. Blanketed across the country from Maine to Texas, this familiar emblem is accepted by the public as the sign of utmost dependability . . . the sign of power and performance for their engines.

Next, there is a steady profit in Cities Service products, because they guarantee the quality that builds up trade. More than 72 years of refining experience have shown us how to gain this consumer satisfaction. People learn quickly to know and trust Cities Service . . . and hence call back again and again. Cities Service products, because they are good, build business. You are certain of increased business when you tie up with Cities Service . . . it means known quality, proved quality, superior quality. So it will well pay you to find out more facts. Write to the nearest marketing and refining company listed below.

Cities Service Petroleum Products are available to you through the following marketing and refining companies:

Name	Headquarters
CITIES SERVICE OIL COMPANY (Delaware)	Tulsa, Okla.
CITIES SERVICE OIL COMPANY (Michigan)	Adrian, Michigan
CITIES SERVICE OIL COMPANY (Ohio)	Cleveland, Ohio
CITIES SERVICE OIL COMPANY (Wisconsin)	Milwaukee, Wisc.
CITIES SERVICE OIL COMPANY, LTD.	Toronto, Ont., Canada
CITIES SERVICE REFINING COMPANY	Boston, Mass.
CITIES SERVICE EXPORT OIL CO.	New York, N. Y.
CREW LEVICK COMPANY	Philadelphia, Pa.
EMPIRE OIL AND REFINING COMPANY	Tulsa, Okla.
LOUISIANA OIL REFINING CORP. (LORECO petroleum products)	Shreveport, La.
A. R. NEWCOMBE OIL COMPANY	Kingston, N. Y.
Refineries	
CITIES SERVICE REFINING COMPANY	East Braintree, Mass.
CREW LEVICK COMPANY	Petty Island, N. J.—Titusville, Pa.
EMPIRE OIL AND REFINING COMPANY	Ponca City, Okla.—Okmulgee, Okla. Gainesville, Texas—East Chicago, Ind.
LOUISIANA OIL REFINING CORP. (LORECO petroleum products)	Bossier City, La. Gas Center, La.

CITIES SERVICE OILS

ONCE - ALWAYS

The "Empire group" is the common designation for a number of Cities Service oil subsidiaries occupying an important position in the petroleum industry in the great Mid-Continent field of the United States. Companies in this group include Empire Gas & Fuel Co., Empire Oil & Refining Co., Indian Territory Illuminating Oil Co., and Cities Service Oil Co. Through these and other companies, Empire produces, transports, refines and markets a complete line of petroleum products.

Cities Service Oils and Gasolene

Summary of Operations in All Fields for January, 1933

SUMMARY OF ALL FIELDS

Wells Completed in January

	Comp.	Prod.	Dry	Gas
Eastern	174	719	15	27
Central Ohio	42	253	6	28
Lima	6	10	1	3
Indiana	21	160	8	7
Michigan	40	14,690	10	4
Kentucky	3	2	2	0
Illinois	1	0	1	0
Kansas	75	20,044	28	2
Oklahoma	157	54,028	40	11
North Central Texas	150	12,029	54	6
E. Cen. and E. Tex.	249	15,517	10	0
West Texas	41	129,485	8	1
Texas Panhandle	23	5,005	1	1
Gulf Coast	128	68,353	32	7
Southwest Texas	113	15,130	58	7
North Louisiana	26	2,935	10	4
Gulf Coast—La.	18	7,830	4	0
Arkansas	6	0	6	0
Mississippi	3	0	3	0
Alabama	1	0	1	0
East Texas—gas area	2	15	1	0
Montana	5	427	2	0
Wyoming	4	85	2	0
Colorado	1	0	1	0
New Mexico	7	5,169	2	2
Utah	3	0	3	0
Total Jan.	1,299	351,886	309	110
Total Dec.	1,250	219,697	270	81
Difference	49	132,189	39	29

RIGS AND WELLS DRILLING

	Rigs	Drlg.	Ttl.
Eastern	53	190	243
Central Ohio	20	92	112
Lima	1	32	33
Indiana	0	35	35
Michigan	96	105	201
Kentucky	2	58	60
Illinois	2	10	12
Kansas	39	133	172
Oklahoma	100	362	462
North Central Texas	51	190	241
E. Central and E. Tex.	63	293	356
West Texas	40	114	154
Texas Panhandle	30	73	103
Gulf Coast—Texas	23	158	181
Southwest Texas	24	112	136
North Louisiana	48	115	163
Gulf Coast—Louisiana	10	72	82
Arkansas	8	36	44
Mississippi	3	14	17
Alabama	0	2	2
East Texas—gas area	2	10	12
Montana	6	47	53
Utah	1	14	15
Wyoming	10	59	69
Colorado	4	50	54
New Mexico	5	52	57
Total Jan.	641	2,428	3,069
Total Dec.	687	2,430	3,117
Difference	46	2	48

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

Oklahoma Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Carter	3	80	1	0
Cotton	1	0	1	0
Creek	32	1,954	4	3
Garfield	1	6	0	0
Hughes	3	189	1	0
Jefferson	3	45	1	0
Kay	1	0	1	0
Lincoln	1	2,500	0	0
Logan	2	4,372	0	1
Marshall	3	30	1	0
McIntosh	1	0	0	1
Noble	2	2,426	0	0
Oklahoma	16	22,185	0	2
Okmulgee	10	360	7	0
Okfuskee	6	532	2	1
Osage	25	6,825	7	0
Pawnee	4	100	1	0
Pittsburgh	1	0	1	0
Pushmataha	1	0	1	0
Pottawatomie	14	11,257	0	0
Seminole	10	593	4	0
Stephens	7	344	3	0
Tulsa	3	106	1	1
Wagoner	7	120	3	2
Total January	157	54,028	40	11
Total December	141	37,797	37	9
Difference	16	16,231	3	2

Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Alfalfa	0	1	1
Atoka	3	5	8
Beckham	0	4	4
Blaine	0	1	1
Cleveland	1	0	1
Carter	6	14	20
Comanche	1	4	5
Cotton	1	1	2
Choctaw	0	1	1
Creek	12	48	60
Dewey	0	1	1
Ellis	0	1	1
Garvin	1	2	3
Grady	2	0	2
Greer	0	2	2
Garfield	1	2	3
Grant	1	0	1
Hughes	4	17	21
Jackson	0	1	1
Jefferson	3	6	9
Kay	1	1	2
Kingfisher	0	2	2
Kiowa	0	4	4
Lincoln	2	11	13
Logan	1	8	9
Muskogee	2	5	7
Marshall	1	6	7
Murray	1	1	2
Noble	2	7	9
Okmulgee	2	19	21
Oklahoma	13	23	36
Okfuskee	4	11	15
Osage	3	30	33
Pottawatomie	14	34	48
Pontotoc	3	15	18
Pittsburgh	2	3	5
Pushmataha	0	1	1
Payne	1	3	4
Pawnee	1	6	7
Seminole	5	23	28
Stephens	3	10	13
Tulsa	2	12	14
Washita	0	4	4
Wagoner	2	14	16
Total January	100	362	462
Total December	81	380	461
Difference	19	18	1

WELLS COMPLETED

CARTER COUNTY

31-1s-2w Trahern, Samedan Oil Co. 4. 75
31-1s-2w Burton, Magnolia Pet. Co. 1. abd
4-1s-3w Smith, Schermerhorn-Ardmore Oil Co. 2 5

Wells completed 3
Production 80
Abandoned 1

COTTON COUNTY

2-2s-10w Moore, Shasta Oil Co. 7 ..... abd

CREEK COUNTY

6-20-8 Colton, S. Martin 8-A 75
27-18-8 Brown, Merritt et al 5 25
34-18-8 Wilson, F. O. Akins 9 150
34-18-8 Wilson, F. O. Akins 10 140
34-18-8 Tiger, Kilgore et al 3 155
24-17-10 Tahkaney, J. H. Wright ..... abd
34-19-8 McNac, Big Four Pet. Co. 2.. 35
3-18-8 Pitts, Wood Oil Co. 1 30
22-18-8 Deer, J. A. Hull 1 50
27-18-8 Escoe 4 100
6-17-10 Simms, Curtis Oil Co. 1 ..... gas
36-17-11 Thompson, Bingham Bros. 2. 70
30-19-10 Brightsman, Johnson Oil & Ref. Co. 3 106
22-18-8 Deer, J. A. Hull 1 50
34-18-8 Tiger, Jones & Dow 6 ..... abd
14-17-8 Fry, Smith et al 5 5
26-18-8 Wills, L. B. Jackson 8 40
34-18-8 Rentie, Dake & Hughes 2 ... 188
34-18-8 Tiger, Kilgore et al 5 110
34-18-8 Wilson, Marrs 5 65
28-19-9 Harmon, W. Sherry 2 ..... gas
16-17-7 Gooden, Texas Co. 11 3
36-15-7 Brush, Olean Pet. Co. 6 240
34-19-9 McClain, Bryan Pet. Co. 2 ... 20
34-18-8 Wilson, F. O. Akin 11 50
34-18-8 Wilson, Jones & Wilson 6 ... 15
34-18-8 Wilson, Jones & Wilson 8 125
34-18-8 Crabtree, Bay State Oil Co. 3. 35
34-18-8 Wilson, Marrs 5 65
6-17-7 Derrisaw, Magnolia Pet. Co. 5 7
11-17-8 Watson, Henry et al 1 ..... abd
21-15-8 Wilson, Bryan Pet. Co. 2 .... abd

Wells completed 32
Production 1954
Abandoned 4
Gas 3

GARFIELD COUNTY

24-22-4w Wilson, Sinclair Prairie Oil Co. 6 5

HUGHES COUNTY

22- 7-8 Witty, Magnolia Pet. Co. 1 ... 129
27- 7-8 Anderson, Texas Co. 1 ..... abd
15- 7-8 Factor, Mid-Co. Co. 6 60

Wells completed 3
Production 189
Abandoned 1

KAY COUNTY

25-28-4 Cooper, Morgan et al 1 ..... abd

JEFFERSON COUNTY

3-7s-5w Seay, Southern Oil Co. 1 ... abd
3-7s-5w Seay, Farlyn Oil Co. 16 25
25-7s-5w Little, Centrop Oil Co. 3 20

Wells completed 3
Production 45
Abandoned 1

LINCOLN COUNTY

18-14-4 Green, Magnolia Pet. Co. 1.. 2500

LOGAN COUNTY

33-17-4w Denney, Texas Co. 1 4372
27-17-4w Shaffer, Sinclair Prairie Oil Co. 1 ..... gas

Wells completed 2
Production 4372
Gas 1

MARSHALL COUNTY

25-7s-5 Little, C. H. Chaffield 2 25
31-7s-6 Adams, Kingston O. & G. Co. 5 5
27-2s-7 Boles, Macmo Oil Co. 1 ..... abd

Wells completed 3
Production 30
Abandoned 1

McINTOSH COUNTY

4-12-14 Porter, McInturff 1 ..... gas

NOBLE COUNTY

20-20-2w Weber, Lucien Cons. Oil Corp. 2 1000
17-20-2w Moelling, Lucien Cons. Oil Corp. 1 1426

Wells completed 2
Production 2426

OKLAHOMA COUNTY

23-12-3w Highley, Frank Russell 1 236
3-11-3w Frisco freight house, Denver P. & R. Co. 2 3208
22-11-3w Dodd, Day & Hodges 1 2147
26-11-3w Wisel, I.T.I.O. Co. 2 643
27-11-3w Little, Nebo Oil Co. 2 3170
34-12-3w Okla. City, Helmerich & Payne 1 1738
34-12-3w Military Add., Wofford Drlg. Co. 3 2178
2-11-3w Sullivan, Blackwell O. & G. Co. 1 ..... gas
26-11-3w Wisel, I.T.I.O. Co. 2 884
26-11-3w Berg, Phillips Pet. Co. 6 ... 278
36-12-3w School Land, Blackwell O. & G. Co. 1 ..... gas
22-11-3w Roff, Day & Hodges 1 1979
26-11-3w Berg, Phillips Pet. Co. 6 1635
26-11-3w Odebracht, Stahl et al 1 814
35-11-3w G. Lord, I.T.I.O. Co. 1 1297
22-11-3w Surback, Transit Oil Co. 1...1978

Wells completed 16
Production 22,185
Gas 2
Gas production 48,000,000

OKMULGEE COUNTY

1-15-13 Bruner, F. D. Misener 1 .... abd
29-14-12 Wilson, Colton, Phillips Pet. Co. 1 ..... abd
36-14-12 Hackaby, Colton, Phillips Pet. Co. 1 ..... abd
19-15-12 Jefferson, Slater Bros. 6 ... abd
36-14-12 Bosen, Bingham Bros. 5 .... abd
33-16-11 Peters, Sheridan Oil Co. 5 ... 50
9-15-14 Ware, Carr & Peterson 8 ... 60
11-13-12 Haynes, Bakers et al 1 .... abd
12-15-12 Fisher, Claremont Oil Co. 4 . 250
11-15-14 Rentie, Dodge Bros. 5 ..... abd

Wells completed 10
Production 360
Abandoned 7

OKFUSKEE COUNTY

31-11-11 Grayson, Minnehoma Oil Co. 1 gas
14-10-11 Micco, Wells et al 4 240
36-10-11 Fish, Olean Pet. Co. 3 170
9-12-11 Peter, J. L. Selby 1 ..... abd
14-10-11 Ben, Capshaw & Vierson 1 ... abd
14-10-11 Stephenson, Wells et al 1 122

Wells completed 6
Production 532
Abandoned 2
Gas 1
Gas production 6,000,000

OSAGE COUNTY

16-24-7 NE, Kasiske & Lewis Prod. 4.1300
21-24-7 NE, Continental Oil Co. et al 2 380
32-24-7 NE, Lewis Prod. Co. 1 ..... abd
17-23-12 NW, Silorian Oil Co. 60 20
25-21-8 NE, Murringold et al 2 ..... abd
35-21-9 NW, Ohio Osage Oil Co. 1 .. abd
15-24-7 NW, Prod. & Ref. Corp. 3 424
16-24-7 SE, Champlin Ref. Co. 2 400
16-24-7 SE, Kasiske et al 3 400
16-24-7 NE, Kasiske and Lewis Prod. Co. 5 100
24-24-7 NE, Prod. & Ref. Corp. 5 20
19-24-8 NW, Prod. & Ref. Corp. 1 ... abd
22-24-8 NE, Sinclair Prairie Oil Co. 2 50
21-24-7 NW, Lewis Prod. Co. 2 2400
10-24-7 SW, Lewis Prod. Co. 1 278
15-24-7 NW, Prod. & Ref. Corp. 3 424
16-24-7 NE, Lewis Prod. Corp. 3 400
15-24-8 SE, F. M. Penney 4 50
29-28-11 SW, J. H. Dewor 1 50
15-24-7 NW, Prod. & Ref. Corp. 4 ... 103
24-24-7 SE, Champlin Ref. Co. 3 .... abd
15-24-8 SW, Continental Oil Co. 5 14
24-24-7 NE, Kasiske & Higgins 6.... abd
21-21-9 SE, Okla. Power & Water Co. 136 ..... abd
16-23-11 SW, F. A. Havers 2 12

Wells completed 25
Production 6825
Abandoned 7

PAWNEE COUNTY

36-20-7 Walkup, Tuttle O. & G. Co. 1. 30
3-20-8 Cohn, Peter Adamson 3 20
6-20-8 Colton, S. Martin 8 50
31-19-4 Williamson, L. H. Wentz 2 .. abd

Wells completed 4
Production 100
Abandoned 1

PITTSBURGH COUNTY

9- 7-18 Carney, Utilities Prod. Co. 1 .. abd

PUSHMATAHA COUNTY

31-3s-15 Ryan, George et al 1 ..... abd

POTTAWATOMIE COUNTY

21- 7-4 Cherry, Hilton Phillips 1 185
33- 7-4 Harrison, Amerada Pet. Corp. 3 300
33- 7-4 Harrison, Amerada Pet. Corp. 4 554
33- 7-4 Harrison, Amerada Pet. Corp. 5 600
31- 7-4 Billington, Helmerich & Payne, 1 300
31- 7-4 Bruno, Mid-Continent Pet. Corp. 1 180
2- 6-4 Lucas, Vivan Oil Co. 2 1506
25- 6-4 Quis, Gypsy Oil Co. 1 1080
32- 7-4 Meyers, Sinclair Prairie Oil Co. 3 980
34- 7-4 Sullivan, Moebris 1 770
35- 7-4 Monnett, Carter Oil Co. 2 ... 168
36- 7-4 Kohdot, Mid-Cont. Pet. Corp. 1 3117
5- 6-5 Zoller, Amerada Pet. Corp. 1.1067
21- 7-4 Cherry, Hilton Phillips 1 450

Wells completed 14
Production 11,257

SEMINOLE COUNTY

20- 9-6 Jones, Stanolind O. & G. Co. 1 95
25- 9-6 Franks, Magnolia Pet. Co. 2.. 45
13- 8-6 Davis, Atlantic Oil Prod. Co. 1 143
2-10-6 Community, Carter Oil Co. et al 1 650
8- 9-6 Rentie, Commercial Drlg. Co. 1 ..... abd
8- 9-6 Phillips, R. H. Pierce & Co. 3 abd
19- 9-6 Hooper, Shell Pet. Corp. 8 ... abd
30- 8-8 Davis, Mid-Kansas O. & G. Co. 7 185
19- 9-6 Fullerton, Amerada Pet. Corp. 2 ..... abd
12- 8-6 Smith, Mid-Cont. Pet. Corp. 4 80

Wells completed 10
Production 598
Abandoned 4

STEPHENS COUNTY

17-2s-8w Cooley, Gillette Bros. 1 ..... abd
29-2s-7w Bristow, George Pace 2 ..... abd
8-1s-4w Green, R. G. Poland 1 ..... abd
1-2s-5w Cobb, Mudge Oil Co. 13 2
8-2s-2w Drew, Skelly Oil Co. 1 240
9-3s-5w McLendon, Owl Oil Co. 6 ... 2
28-2s-7w Duncan, G. Pace 3 100

Wells completed 7
Production 344
Abandoned 3

TULSA COUNTY

30-19-10 Brightsman, Pure Oil Co. 3 .. 106
5-17-14 Perryman, H. W. Bowdin 2. abd
5-17-14 Perryman, H. W. Bowdin 1. gas

Wells completed 3
Production 106
Abandoned 1
Gas 1

WAGONER COUNTY

23-18-15 Norfer, Sand Pet. Co. 1 ..... gas
3-17-15 Jackson, Mid-Co. Corp. 1 .... gas
2-17-15 Tiger, G. E. Cahill 1 ..... abd
3-17-15 Jackson, Geneva & Briggs 1 . abd
5-17-14 Perryman, L. B. Jackson 1 . abd
8-17-14 Hodge, Rachael Oil Co. 2 100
8-17-14 Kernal, Rachael Oil Co. 1 ... 20

Wells completed 7
Production 120
Abandoned 3
Gas 2
Gas production 5,000,000

Kansas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Barton	2	0	2	0
Butler	4	85	3	0
Chautauqua	3	25	2	0
Cowley	3	35	0	1
Ellis	1	187	0	0
Elk	1	50	0	0
Geary	1	0	1	0
Greenwood	10	209	6	0
Harvey	10	4,178	1	0
Kingman	2	850	0	0
McPherson	18	8,555	4	0
Reno	2	3,062	0	0
Rice	5	2,603	1	0
Russell	2	170	0	0
Rush	2	0	1	1
Sedgwick	5	10	4	0
Stafford	1	0	1	0
Sumner	1	0	1	0
Woodson	2	25	1	0
Total January	75	20,044	28	2
Total December	51	23,403	8	1
Difference	24	3,359	20	1

Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Barton	1	5	6
Butler	2	5	7
Edwards	0	1	1
Ellis	0	2	2
Ellsworth	4	5	9
Finney	0	1	1
Greenwood	2	8	10
Harvey	4	17	21
Kingman	2	3	5
McPherson	8	38	46
Phillips	1	1	2
Reno	1	10	11
Rice	7	21	28
Russell	1	3	4
Rush	1	1	2
Rooks	0	1	1
Sedgwick	4	7	11
Sumner	0	1	1
Stafford	1	2	3
Trego	0	1	1
Total January	39	133	172
Total December	32	131	163
Difference	7	2	9

WELLS COMPLETED

BARTON COUNTY

15-20-13w Schneider, Atlantic O. P. Co. 1 abd
11-18-11w Roesler, Danciger O. & R. Co. 1 ..... abd

Wells completed 2
Abandoned 2

BUTLER COUNTY

8-28-4 Ralston, E. B. Shawver 1 ... abd
11-26-4 Ladd, Gypsy Oil Co. 10 85
20-26-7 Ow, National Ref. Co. 1 ..... abd
7-27-7 Seward, National Ref. Co. 1 .. abd

Wells completed 4
Production 85
Abandoned 2

CHAUTAUQUA COUNTY

23-31-10 Webb, Theta Oil Co. 1 25
25-34-6 Day, Hollis Bros. 1 ..... abd
16-24-9 Layton, York State Oil Co. 1. abd

Wells completed 3
Production 25
Abandoned 2

COWLEY COUNTY

36-31-5 Calls, Lewis Prod. Co. 1 25
5-32-5 Lowe, A. D. Crow 1 ..... gas

36-31-5 Cales, Lewis Prod. Co. 1 10

Wells completed 3
Production 35
Gas 1

ELLIS COUNTY

36-12-16w Wieland, Beardmore, Palmer et al 2 187

ELK COUNTY

21-29-9 Smith, Clay Pet. Co. 3 50

GEARY COUNTY

27-13-8 Fechner, Ledournis 1 ..... abd

GREENWOOD COUNTY

6-24-12 Smith, Markus & Gore 4 68
6-24-12 Smith, Polhamus & Selby 1 . 54
8-24-12 Lewis, Matthews & Rex 1 ... abd
6-24-14 Winterschied, Oko Oil Co. 3. 57
5-23-13 Hollister, Mendenhall Oil Co. 3 abd
14-25-13 Mason, Cross & Fields 3 .... abd
29-23-11 O'Neal, Ward McGinnes 2 .. abd
32-22-11 Westcott, York State Oil Co. 16 30
8-24-11 Lewis, Mathews-Rex 3 ..... abd
18-26-9 Elliott, Miller & Gaines 1.. abd

Wells completed 10
Production 209
Abandoned 6

HARVEY COUNTY

8-22-3w Nikkell, J. E. Mabee and Shell Pet. Corp. 1 275
8-22-3w Nikkell, Shell Pet. Corp. 2 .. 513
17-22-3w Schmidt, Shell Pet. Corp. 4 . 1200
20-22-3w Warkentine, Phillips Pet. Co. 2 928
8-22-3w Andrees, Texas Co. 3 75
18-22-3w Neufeldt, Sinclair Prairie Oil Co. 4 390
8-22-3w Neufeldt, Shell Pet. Corp. 1. 59
19-22-3w Martens, Prod. & Ref. Corp. 5 306
17-22-3w Schmidt, Shell Pet. Corp. 3... 432
19-22-3w Martens, Frost, Study et al 5. abd

Wells completed 10
Production 4178
Abandoned 1

KINGMAN COUNTY

19-27-10w North Ratcliff, Skelly Oil Co. 1 700
19-27-10w North Ratcliff, Skelly Oil Co. 2 150

Wells completed 2
Production 850

McPHERSON COUNTY

33-12-3w Friesen, J. E. Mabee et al 2. 728
23-19-2w Knudson, Apex Oil Co. 2 .. 466
26-19-2w Eaton, Youker et al 6 598
35-19-2w Decker "B," Dickey Oil Co. 2. abd
25-19-1w Steinkerchner, Paramount Oil Co. 1 ..... abd
33-21-3w Koehn, McBride, Inc. 3 552
27-20-3w Stuckey, Slick, Pryor & Lockhart 3 883
14-19-2w Meyers, Shell Pet. Corp. 4 .. 447
29-19-1w Blair, Sputz et al 1 55
34-20-3w Gratton, Slick, Pryor & Lockhart 1 ..... abd
12-19-3w Almen, Roth & Faurot 1 309
7-19-2w Dixon, Whan et al 1 10
26-19-2w Williams, Dickey Oil Co. 4 .... abd
32-21-3w Koehn, McBride, Inc. 3 359
32-21-3w Friesen, Mabee Drlg. Co. 4..1476
32-21-3w Nikkell, Mabee Drlg. Co. 5..1780
26-19-2w Eaton, Youker et al 7 463
24-19-2w Gratton, Youker et al 1 429

Wells completed 18
Production 8555
Abandoned 4

RENO COUNTY

1-23-4w Haury, Study, Frost et al 3 .1385
36-22-4w Dick, Manning & Terry 1...1677

Wells completed 2
Production 3062

RICE COUNTY

10-19-10w Brandenstein, Atlantic O. P. Co. 1 1083
31-19-9w Burden, Gypsy Oil Co. 2 648
21-20-10w Schurr, Slick, Pryor & Lockhart 1 ..... abd
6-20-9w Christopher, Gypsy Oil Co. 1.. 835
21-20-10w Thompson, Prod. & Ref. Corp. 3 37

Wells completed 5
Production 2603
Abandoned 1

RUSSELL COUNTY

34-13-15w Mermis, Bridgeport Mach. Co. 13 125
4-14-15w Witt, Billings et al 2 45

Wells completed 2
Production 170

RUSH COUNTY

15-18-16w Ruthers, Schermerhorn Oil Co. 1 ..... gas
13-18-13w Eveleigh, Helmerich & Payne 1 ..... abd

Wells completed 2
Abandoned 1
Gas 1

SEDGWICK COUNTY

17-27-2 Country Club, Magnolia Pet. Co. 1 ..... abd
17-27-3 Lavick, Darby Pet. Co. 1 .... abd
6-26-1 Gorman, Derby Oil Co. 4 .... abd
6-26-1 Richards, Marylin Oil Co. 1 .. 10
6-26-1 Fitch, Pyle & Sutter 1 ..... abd

Wells completed 5
Production 10
Abandoned 4

STAFFORD COUNTY

36-22-12w Richardson, Stanolind O. & G. Co. 2 ..... abd

SUMNER COUNTY

2-33-2 K. Rolfe, Deal O. & G. Co. 1. abd

WOODSON COUNTY

7-24-14 Estes, Theta Oil Co. 4 25
6-24-14 Winterscheid, Pure Oil Co. 15 abd

Wells completed 2
Production 25
Abandoned 1

East Central Texas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Cherokee	1	0	1	0
Freestone	1	0	1	0
Gregg	103	6,503	0	0
Limestone	1	0	1	0
Navarro	2	0	2	0
Red River	1	0	1	0
Rusk	119	8,015	2	0
Smith	5	325	0	0
Upshur	13	822	0	0
Van Zandt	3	52	2	0
Total	249	15,517	10	0
Total last month	311	18,892	10	0
Difference	62	3,375	0	0

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Anderson	2	0	3	5
Angelina	0	2	0	2
Bowie	1	0	0	1
Cherokee	2	0	1	3
Ellis	0	1	0	1
Fannin	0	0	1	1
Franklin	1	0	0	1
Freestone	0	1	0	1
Gregg	23	10	100	133
Henderson	2	0	0	2
Hunt	1	1	0	2
Kaufman	1	1	0	2
Lamar	1	0	0	1
Leon	2	1	3	6
Limestone	1	2	1	4
Morris	1	2	0	3
Nacogdoches	0	1	0	1
Navarro	0	1	1	2
Rains	1	0	0	1
Red River	0	2	0	2
Rusk County	15	11	120	146
Smith	3	2	5	10
Titus	0	1	0	1
Upshur	4	3	6	13
Van Zandt	2	5	5	12
Total	63	47	246	356
Total last month	64	37	227	328
Difference	1	10	19	28

WELLS COMPLETED

CHEROKEE COUNTY

General Crude Oil Co.'s No. 1 Southern Pine Lumber Co. ..... abd

Completions 1
Abandoned 1

FREESTONE COUNTY

Daniels Oil & Royalty Co.'s No. 1 T. F. Young ..... abd

Completions 1
Abandoned 1

LIMESTONE COUNTY

Lone Star Gas Co.'s No. 3 Barron .... abd

Completions 1
Abandoned 1

NAVARRO COUNTY

H. Braselton et al's No. 1 H. L. Albritton ..... abd
Siam Oil Co.'s No. 1 W. P. Coates .... abd

Completions 2
Abandoned 2

RED RIVER COUNTY

L. G. Priest's No. 1 R. W. Peek ..... abd

Completions 1
Abandoned 1

GREGG COUNTY

Abernathy and Kirkpatrick's No. 6 R. M. Wood, open tubing 80
Atlantic Oil Producing Co.'s No. 26-A Burnside, open tubing, ½ hr. 60
Cox and Hamon's No. 13 L. A. Rodden, ¼-in. tubing choke 120
F. H. E. Oil Co.'s No. 6 R. Christian, open tubing, ½ hr. 35
Magnolia Pet. Co.'s No. 13 W. E. Jones, open tubing 120
Magnolia Pet. Co.'s No. 10 Todd-Stinchcomb, open tubing 130
Meridian Oil Co.'s No. 9 T. W. Lee, open tubing, ¼ hr. 35
O. W. R. Oil Co.'s No. 4 C. E. Davis, open tubing 80
Charles Pettitt's No. 4 M. O. Sheppard, open tubing, ½ hr. 45
Rajo Oil Co.'s No. 5 J. C. Barrett, open tubing 75
Sun Oil Co.'s No. 9 Mose Thomas, open tubing 55
J. O. Whittington's No. 5 J. C. Bumpass, open tubing 120
Woodley-Atlantic Oil Producing Co.'s No. 5 Martin Hayes, open tubing 70
Yount Lee Oil Co.'s No. 10-A Davis, open tubing 61
American Liberty Oil Co.'s No. 12 L. P. Griffin, open tubing, ¼ hr. 28
Elliott et al's No. 1 Benson, open tubing, ¼ hr. 70
C. P. Greenwood's No. 3 Loughridge, open tubing 28
Magnolia Pet. Co.'s No. 7 G. Davis, open tubing 16
Rhoads Drlg. Co.'s No. 23 Sabine River, open tubing 50
T. L. James & Co.'s No. 7 Sabine River, open tubing 100
Shell Pet. Corp.'s No. 32 J. R. Watson, open tubing, ½ hr. 45
Sinclair Prairie Oil Co.'s No. 16-A A. Lockhart, open tubing, ¼ hr. 25
Sun Oil Co.'s No. 27 M. T. Cole, open tubing 59
Texas Co.'s No. 26 M. T. Cole, open tubing 73
C. J. Webster's No. 3 L. Martin, open tubing 25
Atlantic Oil Producing Co.'s No. 6-B A. Tooke, open tubing, ½ hr. 68
Atlantic and Stanolind O. & G. Co.'s No. 10 Pishburn 102
Bond and Dillard's No. 10 J. C. Barrett, open tubing, ½ hr. 47
Brown's (receiver) No. 4 G. W. Ritchey, open tubing 95
F. H. E. Oil Co.'s No. 5 E. E. Anderson, open tubing 85
House and Trigger's No. 1 Reese, open tubing 70
Magnolia Pet. Co.'s No. 7 Davis, open tubing 105
Magnolia Pet. Co.'s No. 5 T. W. Tuttle, open tubing, ¼ hr. 21
Duluth and East Texas Oil Co.'s No. 2 School Lot, open tubing 150
Selby O. & G. Co.'s No. 1 A. Miller, open tubing, ½ hr. 70
Smith and Dorough's No. 4 C. C. Clements, open tubing 92
Stanolind O. & G. Co. et als' No. 9 McGeorge, open tubing, ¼ hr. 21
American Liberty Oil Co.'s No. 11 L. P. Griffin, open tubing, ¼ hr. 34
Harry Elliott's No. 3 McNeely, open tubing 80
Gulf Prod. Co.'s No. 11 M. T. Cole, open tubing 92
Gulf Prod. Co.'s No. 7 L. D. Crim, open tubing 77
Humble O. & R. Co.'s No. 29-B S. S. Laird, open tubing 70
E. L. Smith's No. 3 Register, open tubing, 25 min. 33
Stodel Oil Co.'s No. 5 D. Smith, open tubing 80
Texas Co.'s No. 8 Dickson, open tubing. 79
Texas Co.'s No. 1 R. W. Wells, open tubing 40
Atlantic Oil Producing Co.'s No. 9 T. B. Harris, open tubing, ¼ hr. 35
Atlantic Oil Producing Co.'s No. 17 Turner, open tubing, ¼ hr. 40
Atlantic Oil Producing Co.'s No. 19 Turner, open tubing, ¼ hr. 35
Atlantic and Sun Oil Co.'s No. 46 Martin Hayes, open tubing, ¼ hr. 35
Bond and Dillard's No. 1 J. C. Barrett, open tubing 150
Delaney and Stoddard's No. 5 McKinley, open tubing, ½ hr. 38
East Texas Ref. Co.'s No. 14 Hindman, open tubing, 25 min. 40
McCurdy and Carr's No. 4 Richey, open tubing 80
Magnolia Pet. Co.'s No. 14 Jones, open tubing 120
F. W. Merrick's No. 3-B W. B. Nicholson, open tubing, ¼ hr. 18
Shell Pet. Corp.'s No. 13 A. M. and B. N. King, open tubing, ½ hr. 48
Sun Oil Co.'s No. 4 S. J. Boles, open tubing, 50 min. 57
Tide Water Oil Co.'s No. 8 Christian, open tubing, 10 min. 10
Western States Oil Co.'s No. 3 Baulknight, open tubing, ½ hr. 40
Woodley-Atlantic and Sun Oil Co.'s No. 7-C Hayes, open tubing 100
Yount Lee Oil Co.'s No. 8 Flemister, 11/16-in. tubing choke 58
Yount Lee Oil Co.'s No. 6 Tuttle, 11/16-in. tubing choke 60
American Liberty Oil Co.'s No. 13 L. P. Griffin, open tubing 100
Atlantic Oil Producing Co.'s No. 12-A Andrews, open tubing, ½ hr. 65
Gulf Prod. Co.'s No. 16 Brown, open tubing 85
J. D. Hall et al's No. 1 G. U. Utzman, 3 hrs. pumping 20
Johnson and Owens' No. 3-C M. T. Cole, open tubing 140
Rhoads Drlg. Co.'s No. 18 Sabine River, open tubing, 50 minutes 50
Rhoads Drlg. Co.'s No. 8 Sabine River, open tubing, ½ hr. 50
Shell Pet. Corp.'s No. 9 Bates, open tubing, ½ hr. 31
Shell Pet. Corp.'s No. 36 J. B. Watson, open tubing, ¼ hr. 30
Sinclair Prairie Oil Co.'s No. 17 A. A. Lockhart, open tubing, ¼ hr. 25
Sun Oil Co.'s No. 15 M. T. Cole, 1½-in. tubing choke 59
Sun Oil Co.'s No. 14 Charles Lloyd, open tubing 45
Tide Water Oil Co.'s No. 8 Clayton, open tubing, 5 min. 8
Amerada Pet. Corp.'s No. 8 Burnside, open tubing, ¼ hr. 16
Amerada Pet. Corp.'s No. 7 Continental State Bank, open tubing, ¼ hr. 15
Atlantic Oil Producing Co.'s No. 7-B Barnswell, open tubing, ½ hr. 30
Atlantic Oil Producing Co.'s No. 8 Harris, open tubing 85
Atlantic Oil Producing Co.'s No. 55 Moore, open tubing 90
Atlantic Oil Producing Co.'s No. 18 Turner, open tubing, ½ hr. 60
Bond and Dillard's No. 13 Barrett, open tubing 70
C. & G. Oil Co.'s No. 12 Harris, open tubing 70
East Texas Oil & Refining Co.'s No. 6 R. R. Collins, open tubing, ¼ hr. 30
Elliott et al's No. 2 Snoddy, open tubing, ½ hr. 30
Gregg Oil Co.'s No. 1-L T.&P.R.R., open tubing 102
Guiberson Oil Co.'s No. 2 Hopkins, open tubing 70
Gulf Prod. Co.'s No. 7 M. F. Barker, open tubing 60
Humble O. & R. Co.'s No. 6 Clements, ¾-in. tubing 76
Magnolia Pet. Co.'s No. 9 Davis, open tubing 120
Seigler and McCall's No. 9 Misse Young, open tubing 265
Stanolind and Simms Oil Co.'s No. 10 J. W. Akin, open tubing, ¼ hr. 15
Tide Water Oil Co.'s No. 13 Davis, open tubing, 10 min. 23
Virginia Oil Co.'s No. 3-A T. B. Harris, open tubing 60
American Liberty Oil Co.'s No. 3 S. Smith, open tubing, 20 min. 35
Grabor Oil Co.'s No. 1 A. A. King, open tubing 100
Rhoads Drlg. Co.'s No. 17 Sabine River, open tubing, ½ hr. 50
Shell Pet. Corp.'s No. 34 J. B. Watson, open tubing, ½ hr. 25
Sun Oil Co.'s No. 16 M. T. Cole, 1½-in. tubing choke 58
Texas Co.'s No. 28 M. T. Cole, open tubing 72
Texas Co.'s No. 15 H. T. Elder, open tubing 65
Tide Water Oil Co.'s No. 18 M. G. Barton, open tubing, 5 min. 16
Tide Water Oil Co.'s No. 19 M. G. Barton, open tubing, 10 min. 30

Completions 103
Initial production 6503

RUSK COUNTY

George Hudson's No. 1-A Jeff Phillips. abd
Black and Stroube's No. 4 Jernigan, open tubing, 45 min. 50
C. M. Cope's No. 1 Taylor, pumping 3 hrs. 20
East Texas Refining Co.'s No. 14 D. Wills, open tubing 60
Humble O. & R. Co.'s No. 26-A S. S. Laird, open tubing 80
Humble O. & R. Co.'s No. 33-B S. S. Laird, open tubing 70
Humble O. & R. Co.'s No. 9-B W. P. Moore, open tubing 92
Jones and Atlantic Oil Producing Co.'s No. 4-A M. A. Peterson 100
Jones and Reserve Pet. Co.'s No. 6 D. Wills, open tubing 75
Sun Oil Co.'s No. 12 J. R. Bealle, open tubing 83
Turman Oil Co.'s No. 8-B Brightwell, open tubing, ¼ hr. 35
Wheelock and Collins' No. 9 D. Wills, open tubing 100
Ajo Oil Co.'s No. 3 Joe Lee, open tubing, 33 min. 38
American Liberty Oil Co.'s No. 13 R. W. Fair, open tubing, 6 min. 10
East Texas Refining Co.'s No. 4 Foster-Barksdale, open tubing, ¼ hr. 25
East Texas Refining Co.'s No. 4-C Glen Pool, open tubing, ¼ hr. 22
Falcon Oil Co.'s No. 7 Perkins, open tubing, ¼ hr. 33
George Greer's No. 1 R. P. Grambling, open tubing 40
Humble Oil & Ref. Co.'s No. 4-B F. Bagwell, ¾-in. tubing choke 78
Humble Oil & Ref. Co.'s No. 30 W. L. Price, ¾-in. tubing choke 50
Hunt Prod. Co.'s No. 9-B Ashby, 49 min., pumping 20
Hunt Prod. Co.'s No. 10-D Bradford, pumping, 2 hrs. 20
Illinois Oil Co.'s No. 3 Florence, open tubing 80
Johnson and Rogers' No. 5 C. W. Mullins, open tubing, ½ hr. 42
Mid-Kansas O. & G. Co.'s No. 54 M. M. Cross, open tubing 76
Mid-Kansas O. & G. Co.'s No. 67 M. M. Cross, open tubing 60
Mid-Kansas O. & G. Co.'s No. 56 W. T. Grissom, open tubing 96
Spansco Oil Co.'s No. 7 W. P. Brett, open tubing, ¼ hr. 26
Standard of Kansas' No. 2 J. R. Irion, open tubing, ½ hr. 40
Stanolind and Pure Oil Co.'s No. 25 Moores, open tubing, 26 min. 20
Texas Co.'s No. 11 J. W. Wilson, open tubing 87
Tide Water Oil Co.'s No. 14 Pinkston, open tubing, ¼ hr. 20
Atlantic Oil Producing Co.'s No. 3 George Thomasson, open tubing, ½ hr. 60
Gulf Prod. Co.'s No. 5 M. R. Terrell, open tubing 95
W. K. H. Oil Co.'s No. 2 Morris, open tubing, 0 min. 20
Humble O. & R. Co.'s No. 7 Minor, open tubing, ½ hr. 16
Lewis Prod. Co.'s No. 5 W. B. Wells, open tubing 85
Snowden and McSweeney's No. 14 Roy Laird, open tubing 82
Tide Water Oil Co.'s No. 3-C F. L. Buntyn, open tubing, ¼ hr. 30
American Liberty Oil Co.'s No. 3 Joe Lee, open tubing, ¼ hr. 30
Butler and Calhoun's No. 2 F. J. Cox, open tubing, ½ hr. 30
J. L. Collins' No. 3 Dan Kelly, open tubing 76
Ebony Oil Co.'s No. 5 Deason, open tubing, ½ hr. 25
Gulf Prod. Co.'s No. 9 W. L. Murphy, open tubing 80
Humble O. & R. Co.'s No. 3-A Holt, open tubing 96
Humble O. & R. Co.'s No. 17 C. J. Thompson, open tubing 93
Humble O. & R. Co.'s No. 22 John W. Turner, open tubing 39
Hunt Prod. Co.'s No. 12-D Bradford, open tubing 20
Hunt Prod. Co.'s No. 17 C. Fair, open tubing, ½ hr. 37
Leith & Bateman's No. 1 W. W. Hammet ..... abd
McMahon et al's No. 1 Joe Lee, open tubing 45
J. E. Mabee's No. 9 W. P. Brett, open tubing 60
Mid-Kansas O. & G. Co.'s No. 17 Burton, open tubing 76
Mid-Kansas O. & G. Co.'s No. 14 Ledbetter, open tubing 108
Octo Oil Co.'s No. 2 E. B. Alford, 3 hrs. swabbing 75
Tide Water Oil Co.'s No. 3 Lum Tolliver, open tubing, ¼ hr. 15
Ward Oil Co.'s No. 22 E. S. Thrash, open tubing, 90 min. 78
R. W. Whisenhunt's No. 4-A G. W. Eaton, open tubing 75
Bowles Oil Co.'s No. 10 Dick Wells, open tubing 40
East Texas Oil & Ref. Co.'s No. 1 W. Starr, 3 hrs. pumping 30
Humble O. & R. Co.'s No. 91 L. D. Crim, open tubing 116
Humble O. & R. Co.'s No. 5-A Ladd, open tubing 88
Humble O. & R. Co.'s No. 9-A Ben Laird, open tubing 80
Humble O. & R. Co.'s No. 6-B Ben Laird, open tubing 90
Humble O. & R. Co.'s No. 32 S. S. Laird, open tubing 86
Humble O. & R. Co.'s No. 42-B S. S. Laird, open tubing 70
Marine Oil Corp.'s No. 6 Nat Bean, open tubing, 40 min. 90

Tide Water Oil Co.'s No. 6 W. M. Jernigan, open tubing, ¼ hr. 30
Tide Water Oil Co.'s No. 12 H. P. Leverett, open tubing, ¼ hr. 30
Westheimer & Daube's No. 7 D. M. Peterson, open tubing 95
Champlin & Bass' No. 4 R. G. Mason, open tubing, ¼ hr. 21
E. E. Coombs' No. 6-B Fox, open tubing 70
R. H. Dearing & Sons' No. 6-A P. Finney, open tubing, 33 min. 27
East Texas Ref. Co.'s No. 3-C Ras Pool, open tubing, ¼ hr. 22
Humble O. & R. Co.'s No. 34 W. L. Pace, ¾-in. tubing choke 70
Humble O. & R. Co.'s No. 5-C R. E. L. Sivley, ¾-in. tubing choke 70
Hunt Prod. Co.'s No. 9 Reid, open tubing, 22 min. 25
Great States Oil Co.'s No. 2 D. C. Joiner, open tubing 70
Lion Oil & Refining Co.'s No. 7-A Brooks, open tubing 60
Mid-Kansas O. & G. Co.'s No. 69 M. M. Cross, open tubing 80
Mid-Kansas O. & G. Co.'s No. 52 W. T. Grissom, open tubing 88
Mid-Kansas O. & G. Co.'s No. 60 W. T. Grissom, open tubing 86
Ortiz Oil Co.'s No. 3-A Tolliver, open tubing 85
Ortiz Oil Co.'s No. 4-A Tolliver, open tubing 30
Shaw & Sheps' No. 24 Stoddard, open tubing, ½ hr. 15
Sinclair Prairie Oil Co.'s No. 6-B Mayfield, open tubing, ¼ hr. 23
Great States Oil Co.'s No. 2 Giles, open tubing 100
Southern Prod. Co.'s No. 4 Giles, open tubing 65
American Liberty Oil Co.'s No. 3 Brock estate, open tubing, ½ hr. 45
Devonian Oil Co.'s No. 19 R. A. Motley, open tubing 98
Gulf Prod. Co.'s No. 6 R. N. Brightwell, open tubing 76
Humble O. & R. Co.'s No. 89 L. D. Crim, open tubing 86
Humble O. & R. Co.'s No. 8-A Ben Laird, open tubing 125
Humble O. & R. Co.'s No. 8-B Ben Laid, open tubing 123
Jones and Atlantic Oil Prod. Co.'s No. 3-A M. E. Peterson, open tubing ... 100
Tide Water Oil Co.'s No. 9 W. P. Moore, open tubing, ¼ hr. 35
Sam K. Vierson's No. 4 Jernigan, open tubing, ½ hr. 62
Octo Oil Co.'s No. 1 E. B. Alford, swabbing 3 hrs. 20
Butler and Calhoun's No. 1 F. J. Cox, open tubing 30
Combined Oil Interests' No. 15 G. W. Eaton, open tubing 125
DeArman & McMillan's No. 4 Jesse Menshew, open tubing, ½ hr. 60
Humble O. & R. Co.'s No. 6 Walter Shaw, open tubing, ½ hr. 60
Humble O. & R. Co.'s No. 10-A Silvey, open tubing 65
Humble O. & R. Co.'s No. 11-A J. H. Silvey, open tubing 82
Humble O. & R. Co.'s No. 14-C J. Thompson, open tubing 42
Humble O. & R. Co.'s No. 6 C. W. Wilson, open tubing 39
Hunt Prod. Co.'s No. 11-D Bradford, 90 min. 20
Hunt Prod. Co.'s No. 16-C R. W. Fair, open tubing 75
Hunt Prod. Co.'s No. 2 Mayfield-Alford, 2 hrs. pumping 20
J. E. Mabee's No. 8 W. P. Brett, open tubing, ½ hr. 75
Mid-Kansas O. & G. Co.'s No. 68 Cross, open tubing 68
Mid-Kansas O. & G. Co.'s No. 13 D. Ledbetter, open tubing 98
Mid-Kansas O. & G. Co.'s No. 8 J. Lunsford, open tubing 76
Mid-Kansas O. & G. Co.'s No. 10 R. G. Mason, open tubing 44
Mid-Kansas O. & G. Co.'s No. 22 S. H. Moore, open tubing 76
Sun Oil Co.'s No. 8-A Lee, open tubing 38
Tress Oil Co.'s No. 1 A. J. and D. F. Deason, 3 hrs. pumping 135
Turman Oil Co.'s No. 7 Kangerga, open tubing, ¼ hr. 32
R. W. Whisenhunt's No. 2 Gabe-McElroy, open tubing 60

Completions 119
Initial production 3015
Abandoned 2

SMITH COUNTY

Big Indian Oil Co.'s No. 2 Robinson, 1-in. tubing 75
R. J. McMurray's No. 4 F. Cole, open tubing 60
R. J. McMurray's No. 4 Robinson, open tubing 120
Mid-Kansas O. & G. Co.'s No. 24 J. H. Sharp, open tubing 44
Sinclair Prairie Oil Co.'s No. 7 Patterson, open tubing 26

Completions 5
Initial production 325

UPSHUR COUNTY

Humble O. & R. Co.'s No. 5 J. Phillips, open tubing 54
Stroube & Stroube's No. 11 R. J. Mackey, open tubing 50
Sun Oil Co.'s No. 3 O'Byrne, open tubing 20
Magnolia Pet. Co.'s No. 11 R. A. Adkins, open tubing 75
Magnolia Pet. Co.'s No. 10 N. W. Blackwell, open tubing 84
Manzel et al's No. 1 C. B. Mackey, open tubing 25
Roeser & Pendleton's No. 4 E. C. Evers, open tubing, 24 hrs. 30
Atlantic Oil Prod. Co.'s No. 13 Mayers, open tubing, ½ hr. 80
Humble O. & R. Co.'s No. 6 Phillips, open tubing, ¼ hr. 13
R. F. Phillips' No. 1 R. R. Cookel, open tubing, 30 min. 30
Sun Oil Co.'s No. 4 A. J. Watkins, open tubing, ¼ hr. 11
J. E. Watts' No. 2 Eva O'Byrne, swabbing, per day 50
Atlantic Oil Prod. Co.'s No. 12 Porter, open tubing 90

Completions 13
Initial production 622

VAN ZANDT COUNTY

Everett Drlg. Co.'s No. 1 J. J. Goode.. abd
Gray & Williams et al's No. 1 Paschall. abd
Pure Oil Co.'s No. 9 N. E. Clark 53

Completions 3
Initial production 53
Abandoned 2

North Texas

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Archer	55	9,658	14	0
Brown	7	201	2	1
Callahan	3	0	1	2
Clay	3	0	3	0
Coleman	2	105	0	0
Cooke	2	0	2	0
Eastland	3	35	0	1
Montague	9	23	6	0
Palo Pinto	2	55	0	0
Parker	1	0	0	1
Shackelford	12	279	4	0
Throckmorton	3	14	2	0
Wichita	6	22	3	0
Wilbarger	3	35	2	0
Wise	1	0	1	0
Young	38	1,569	13	1
Total January	150	12,029	54	6
Total December	118	6,374	58	1
Difference	32	5,655	4	5

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Archer	13	8	55	76
Baylor	0	2	2	4
Brown	3	3	1	7
Callahan	1	5	0	6
Clay	1	0	1	2
Coleman	2	2	7	11
Eastland	0	1	2	3
Erath	0	1	0	1
Foard	1	1	3	5
Grayson	0	4	0	4
Jack	1	1	3	5
Johnson	1	2	0	3
Montague	2	1	2	5
Palo Pinto	0	2	2	4
Parker	0	2	0	2
Shackelford	4	2	10	16
Stephens	2	3	6	11
Taylor	0	2	1	3
Throckmorton	0	0	3	3
Wichita	3	4	3	10
Wilbarger	2	1	2	5
Wise	0	1	0	1
Young	15	10	29	54
Total January	51	58	122	241
Total December	42	42	120	204
Difference	9	16	12	37

WELLS COMPLETED

ARCHER COUNTY

L. T. Burns' No. 1 W. P. Ferguson .... abd
Fain & McGaha's No. 16 Ferguson ... 24
Fain & McGaha's No. 17 Ferguson ... 10
Fain & McGaha's No. 18 Ferguson ... abd
Gray Drlg. Co.'s No. 2 Ferguson 90
C. W. Boller et al's No. 5 Perkins ... 75
C. W. Boller's No. 12 Perkins 125
C. W. Boller's No. 1 Perkins ..... abd
Champion & Outlaw's No. 1 Andrews.. abd
Continental Oil Co.'s No. 3 Falls 2062
Continental Oil Co.'s No. 4 Logan .. 18
Continental Oil Co.'s No. 5 Logan ... 288
W. R. Cooper et al's No. 4 Hamilton.. 10
F. P. Cullum's No. 10 Falls-Ellis 300
F. P. Cullum's No. 12 Falls-Ellis 225
F. H. E. Oil Co.'s No. 5 W. T. Coffield.. 2
Golding & Cochran's No. 1-B Perkins.. abd
W. B. Hamilton's No. 19 Abercrombie.. 225
W. B. Hamilton's No. 26 Abercrombie . 129
W. B. Hamilton's No. 4 Coffield 123
W. B. Hamilton's No. 7 Coffield 200
W. B. Hamilton's No. 9 Pace 150
Humble Oil & Ref. Co.'s No. 6 Hamilton 52
King Royalty Co.'s No. 3 Andrews ... abd
McDaniel et al's No. 4 Benson 288
Minnick's No. 1 Ben W. Garvey ..... abd
George L. Pace's No. 7 Arnold 80
R. C. Parker's No. 1 Blewett ..... abd
Perkins & Cullum's No. 6 Falls-Boyles 200
Perkins & Cullum's No. 7 Falls-Boyles 225
Perkins & Cullum's No. 8 Falls-Boyles 300
Perkins & Cullum's No. 9 Falls-Boyles 250
Perkins & Cullum's No. 7 Falls-Haymen.1836
Perkins & Cullum's No. 13 Falls-Tikten. 70
Simms Oil Co.'s No. 2 Perkins 500
Jack Spratt's No. 1 Farmer ..... abd
Texas Co.'s No. 2 Andrews 90
C. W. Boller's No. 12 Perkins 125
L. T. Burns' No. 2 E. T. Taber ..... abd
Consolidated Oil Co.'s No. 1 Kinder... abd
F. P. Cullum's No. 9 Falls-Ellis 250
W. B. Hamilton's No. 24 Abercrombie.. 84
W. B. Hamilton's No. 25 Abercrombie.. 116
W. B. Hamilton's No. 4 Coffield 20
W. B. Hamilton's No. 5 Coffield 59
W. B. Hamilton's No. 6 Coffield 117
W. B. Hamilton's No. 5 Ikard 165
W. L. Hawkins' No. 3 W. R. Pace ... 10
King Royalty Co.'s No. 2-A Andrews. abd
McDaniel & Horwitz' No. 3 Benson ... 15
W. E. Maxson, Jr.'s No. 1 Perkins ... abd
James E. Parker's No. 1 Boone ..... abd
Perkins & Cullum's No. 5 Falls-Boyles. 250
Perkins & Cullum's No. 6 Falls-Hanzen. 250
Petroleum Producer Co. et al's No. 2 Richardson 150

Completions 55
Initial production 9658
Abandoned 14

BROWN COUNTY

Charter Oil Co.'s No. 1-B Reeves 168
R. C. McCarter's No. 1-A Dunsman ... 35
S. B. Owens' No. 11 R. Lynch ..... abd
Petroleum Oil Interest, Inc.'s No. 8 Alcorn 8
Petroleum Oil Interest, Inc.'s No. 1 J. M. Moore et al ..... gas
Petroleum Oil Interest, Inc.'s No. 23 M.J. Suttles ..... abd
Arthur Elms' No. 1 S. M. Parks ..... abd

Completions 7
Abandoned 3
Initial production 201
Gas wells 1

CALLAHAN COUNTY

A. L. Spencer's No. 1 Finley ..... gas
A. L. Spencer's No. 2 Finley ..... gas
Lawson Oil & Gas Co.'s No. 3 Dyer ... abd

Completions 3
Initial production 0
Gas wells 2
Abandoned 1

CLAY COUNTY

Wheeler & Brashear's No. 1 Hansard .. abd
C. V. Chenault's No. 1 J. N. Craig ... abd
J. W. Culbertson's No. 1 Cotter ..... abd

Completions 3
Abandoned 3

COLEMAN COUNTY

Arcadia Ref. Co. et al's No. 7 Golson .. 20
Anderson & Taylor's No. 3 G. W. Stewardson 85

Completions 2
Initial production 105

COOKE COUNTY

Couch & Rewaldt's No. 1 R. W. Truce. abd
Humble Oil & Ref. Co.'s No. 7 Poteet. abd

Completions 2
Abandoned 2

EASTLAND COUNTY

Ralph Herring et al's No. 1 C. E. Allen.gas
Texas Pacific Coal & Oil Co.'s No. 4 Allen 5
E. R. Bahan's No. 1 S. P. fee 30

Completions 3
Initial production 35
Gas wells 1

MONTAGUE COUNTY

Arco Oil Co.'s No. 4 Cunningham 14
Arco Oil Co.'s No. 5 Cunningham 9
Egger Achnig et al's No. 1 Glass ..... abd
Russell & Monroe's No. 1 Flannery ... abd
Scott & Grant's No. 1 Browning ..... abd
Texas Co.'s No. 1 W. W. Jones ..... a'd
Texas Co.'s No. 1 F. M. O'Neia 141
A. R. Dillard's No. 1 Dowd ..... abd
Humble Oil & Ref. Co.'s No. 1 Cobb ... abd

Completions 9
Initial production 164
Abandoned 6

PALO PINTO COUNTY

Brazos River Gas Co.'s No. 8 Sleigh... 5
Palo Pinto Oil & Gas Co.'s No. 1 Ed S. Britton 80

Completions 2
Initial production 85

PARKER COUNTY

Co-Fo Oil & Gas Co.'s No. 1 Mrs. Belle Abbott ..... gas

Completions 1
Gas wells 1

SHACKELFORD COUNTY

Bisig et al's No. 1 Green ..... abd
Callahan & Brewer's No. 6 Jeter 3
C. B. Christie et al's No. 2 Reynolds .. abd
Dean & Terry's No. 1 Mrs. T. B. Hadley abd
Gilman & McMurray's No. 8 Jeter 50
Donald W. Mackey's No. 11 T. W. Lee. 11
Roeser & Pendleton's No. 7-201 Morris-Buie 65
Tannehill et al's No. 7 J. B. Matthews 5
Warren et al's No. 3 L. L. Smith ..... abd
Wilson Drlg. Co.'s No. 7-201 Morris-Buie 100
A. C. Walker's No. 2 B. S. Walker ... 6
D. W. Mackey's No. 12-B T. W. Lee ... 30

Completions 12
Initial production 279
Abandoned 4

THROCKMORTON COUNTY

J. H. Bearman's No. 1 J. C. Irwin ..... abd
Continental Oil Co.'s No. 14 S. J. Walker abd
A. S. Michaels' No. 1 D. McKeechan ... 14

Completions 3
Initial production 14
Abandoned 2

WICHITA COUNTY

Bolin & Lindsey Maer's No. 1 Roberts. abd
Hall Hester's No. 1 M. A. Love ..... abd
Morgan & Anderson's No. 33 Goetze ... 10
Petroleum Producers Co.'s No. 1 Allen & Kemp 2
A. D. Wolf's No. 2 Daume 10
S. R. Ellis' No. 1 J. G. Hardin ..... abd

Completions 6
Initian production 22
Abandoned 3

WILBARGER COUNTY

Waggoner Ref. Co.'s No. 3 Waggoner... abd
Texas Co.'s No. 3 Waggoner 38
Allen-Walker's No. 1 N. R. Heath .... abd

Completions 2
Initial production 38
Abandoned 2

WISE COUNTY

J. T. Nails' No. 1 J. G. Stevens ..... abd

Completions 1
Abandoned 1

YOUNG COUNTY

J. B. Baker, Jr.'s No. 1 Perkins 15
Belknap Oil Co.'s No. 3 Belknap 100
Belknap Oil Co.'s No. 4 Belknap 125
Brek Oil Co.'s No. 2 Newman 30
Corvette Oil Corp.'s No. 1 McClatchey. abd
Densmore & Stipe's No. 1 Neeley ..... abd
F. H. E. Oil Co.'s No. 2-A Stewart 5
G. C. Gilmore's No. 1 Logan ..... abd
Iron Mountain Oil Co.'s No. 7 Y. Swain 15
Charles Kleiner et al's No. 4 Belknap .. 165
Charles Kleiner et al's No. 5 Belknap .. 150
Maer & Hamilton's No. 9 Jeffery 110
W. N. Nichols' No. 1 Routon ..... abd
Petroleum Producer Co.'s No. 2 Burris. 25
D. L. Wolf's No. 1 Cox ..... abd
D. L. Wolf's No. 1 Ellis ..... abd
Charles Knox's No. 3 Manning 210
Wooten & Reed's No. 1 Kilpatrick ... abd
Nash & Windfohr's No. 5 Graham-Vick. abd
Gorsuch Oil Co.'s No. 9 Mathews 10
Iron Mountain Oil Co.'s No. 4 Jordan .. 15
Charles J. Kleiner et al's No. 3 Belknap 90
L. A. Long's No. 3 Garvey 25
Maer & Hamilton's No. 8 Jeffery 165
Nix & Reim's No. 1 Baldwin 5
Petroleum Producers Co.'s No. 1 Burris. 50
Petroleum Producers Co.'s No. 10 Hennig 8
Pitzer & West's No. 1 McComas 30
Texas Co.'s No. 1 Atchley ..... abd
D. L. Wolf's No. 1 Cox et al ..... abd
Wooten & Reed's No. 1 Bagley ..... abd
Wooten & Reed's No. 2 Bagley ..... abd
E. C. Stovall's No. 13 fee ..... gas
Beavers Reed et al's No. 3 Montgomery 108
Belknap Oil Co.'s No. 2 Belknap 100
B. C. Gilmore's No. 1 Drum 8
B. C. Gilmore's No. 2 Drum ..... abd
Gorsuch Oil Co.'s No. 8 5

Completions 38
Initial production 1569
Abandoned 13
Gas wells 1

West Texas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Ector	2	281	0	0
Fisher	3	1,000	1	0
Glasscock	4	2,715	0	0
Howard	5	2,763	0	0
Irion	1	30	0	0
Jones	2	128	1	0
Loving	1	0	1	0
Menard	1	0	1	0
Pecos	4	118,504	0	0
Reagan	2	180	1	0
Runnels	4	1,653	1	0
Ward	11	2,182	2	0
Winkler	2	50	0	1
Total January	41	129,485	8	1
Total December	18	7,713	2	0
Difference	23	121,767	6	1

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Andrews	1	0	0	1
Brewster	0	1	0	1
Concho	0	1	0	1
Crane	1	1	2	4
Crockett	1	0	0	1
Dawson	0	1	0	1
Ector	6	3	13	22
Fisher	2	2	6	10
Gaines	0	0	1	1
Glasscock	2	4	3	10
Howard	3	3	7	13
Irion	0	1	0	1
Jones	2	2	2	6
Loving	2	1	5	8
Pecos	3	6	8	17
Reagan	1	0	1	2
Runnels	2	1	4	7
Scurry	0	4	0	4
Terrell	0	2	1	3
Upton	2	0	2	4
Val Verde	1	0	0	1
Ward	6	4	10	20
Winkler	4	2	10	16
Total January	40	39	75	154
Total December	35	23	79	137
Difference	5	16	4	17

WELLS COMPLETED

ECTOR COUNTY

Skelly Oil Co.'s No. 1 F. U. Addis 155
Landreth Prod. Corp. et al's No. 1 O. B. Holt 126

Completions 2
Initial production 281

FISHER COUNTY

Mid-Continent Pet. Corp.'s No. 2 Pardue.1000
Roeser & Pendleton's No. 2 T. E. Hill... abd

Completions 2
Initial production 1000
Abandoned 1

GLASSCOCK COUNTY

Noble Drlg. Co.'s No. 2 Baker 1286
Simms Oil Co.'s No. 3-A Coffee 830
Humble Oil & Ref. Co.'s No. 2 Arrington 19
H. O. Wooten's No. 1-C Edward 580

Completions 4
Initial production 2715

HOWARD COUNTY

F. A. Frazier et al's No. 1 G. T. Hall.. 20
Merrick & Lamb's No. 9 Chalk 144
Plymouth Oil Co.'s No. 9 Kloh et al.. 1140
Schmerhorn's No. 7 Kloh 1269
Sinclair Prairie Oil Co.'s No. 9 G. M. Dodge 190

Completions 5
Initial production 2763

IRION COUNTY

Bristol et al's No. 2 Nutt 30

Completions 1
Initial production 30

JONES COUNTY

Dyer et al's No. 1 T. L. Odom ..... abd
John Kingsberry's No. 3 Swann 128

Completions 2
Initial production 128
Abandoned 1

LOVING COUNTY

J. D. Goulette, Jr. et al's No. 1 W. D. son ..... abd

Completions 1
Abandoned 1

MENARD COUNTY
L. G. Priest et al's No. 1 Sorrell ..... abd

Completions 1
Abandoned 1

PECOS COUNTY
Mid-Kansas Oil & Gas Co.'s No. 2 Turner 50,440
Mid-Kansas Oil & Gas Co.'s No. 22 Smith-Tayler 5,874
Mid-Kansas Oil & Gas Co.'s No. 11-H Yates 62,160
Easter & McCurdy's No. 3-A Shell-Smith 30

Completions 4
Initial production 118,504

REAGAN COUNTY
G. R. Snider e tal's No. 1 Hughes .... abd
Big Lake Oil Co.'s No. 12-C University. 180

Completions 2
Initial production 180
Abandoned 1

RUNNELS COUNTY
Golden Pet. Co.'s No. 2 McMillan 400
A. G. Agnew & Sons, Inc.'s No. 1 H. B. Fowler 652
B. C. Mann et al's No. 1 Wade ..... abd
Mann et al's No. 1 Wade 600

Completions 4
Initial production 1652
Abandoned 1

WARD COUNTY
Prince Bros.' No. 2-B Hall-Roberts ... abd
California Oil Co.'s No. 2 J. F. York .. 158
Abell Bros.' No. 1 Archenhold 49
Atlantic Oil & Prod. Co.'s No. 9 Johnson 200
Atlantic Oil & Prod. Co.'s No. 14 Johnson 100
Gulf Prod. Co.'s No. 38 O'Brien 251
Abell Bros.' No. 1 Llano-Owens 87
Plains-Rector Oil Co.'s No. 1 Monroe ... abd
Gulf Prod. Co.'s No. 23 Hutchins 670
Gulf Prod. Co.'s No. 24 Hutchins 366
Gulf Prod. Co.'s No. 30 O'Brien 301

Completions 11
Initial production 2182
Abandoned 2

WINKLER COUNTY
Sid Richardson's No. 1-B Scarborough.. gas
Sid Richardson's No. 2 State Scarborough 50

Completions 2
Initial production 50
Gas wells 1

Southwest Texas Fields

Summary of Field Operations

Pool—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Agua Dulce ...	2	100	1	0	0	0	0
Byersville ...	1	25	0	0	1	0	1
Cedar Creek .	1	100	0	0	1	1	2
Chicon Lake .	2	4	1	0	0	0	0
Coleta Creek.	1	0	0	1	0	0	0
Cuevitas Pool.	3	1,200	1	0	0	0	0
West Cole ...	2	150	1	0	0	2	2
North Dale ..	2	100	0	0	0	3	3
S. Gov. Wells.	5	2,387	0	0	0	2	2
N. Gov. Wells.	23	8,558	1	2	2	15	17
Eckert Pool..	5	36	0	0	0	4	4
Eagle Hill ...	8	1,232	2	0	1	1	2
Laurel Field .	2	0	2	0	0	1	1
Kohler Pool .	1	0	1	0	0	0	0
Sarnosa Pool.	1	168	0	0	0	1	1
Jacob	2	50	1	0	0	1	1
S. R. C. Pool.	1	0	1	0	0	0	0
Marina Field.	1	1,000	0	0	0	1	1
Jennings ...	1	0	0	1	0	0	0
Miscellaneous.	49	20	46	3	19	80	93
Total Jan...	113	15,130	58	7	24	112	136
Total Dec...	92	18,485	43	7	30	113	143
Difference .	21	3,355	15	0	6	1	7

WELLS COMPLETED
AGUA DULCE—NUECES COUNTY
Ollie Purl, Clymore et al 1 100
Ollie Purl, Banquette Oil Co. 1 ..... abd
BYERSVILLE POOL—WILLIAMSON COUNTY
Reiger, Taylor Prod. Co. 1 25
CEDAR CREEK—BASTROP COUNTY
Am. Natl. Bank, Cole Pet. Co. 2 100
CHICON LAKE—MEDINA COUNTY
S. A. Sub. Farms, Pearson Oil Co. 7-A. 4
S. A. Sub. Farms, Pearson Oil Co. 14-A abd
COLETA CREEK—VICTORIA COUNTY
Maurer, John F. Camp 1 ..... gas
CUEVITAS POOL—STARR COUNTY
M. Guerra, Mims, Hamill & Evans 1 ... abd
M. Guerra, Sun Oil Co. 9-A 800
M. Guerra, Sun Oil Co. 4-B 400
WEST COLE—WEBB COUNTY
Benavides, French Oil Corp. 8-A ..... abd
Benavides, Cole Pet. Co. 80 150
NORTH DALE—BASTROP COUNTY
Riddle, Ogden, Reed & Sun 1 20
Riddle, Marts & Beavens 4 80
S. GOVERNMENT WELLS—DUVAL COUNTY
C. W. Hahl, Bridwell 3 168
P. White, Humble Oil & Ref. Co. 16 150
Lundell, Cox & Hammond 3 1800
P. White, Humble Oil & Ref. Co. 14 ... 144
P. White, Humble Oil & Ref. Co. 15 ... 125
N. GOVERNMENT WELLS—DUVAL COUNTY
B. T. Ellison, Al Buchanan 4 100
Duval Ranch Co., Reynosa Oil Corp. 6-A 70
Hahl, Navarro Oil Co. 27-A 100
Duval Ranch Co., Reynosa Oil Corp. 2-D 960
Hahl, Humble Oil & Ref. Co. 29 960
Hahl, Humble Oil & Ref. Co. 26 1200
Duval Ranch Co., Humble Oil & Ref. Co. 3 ..... abd
Hahl, Humble Oil & Ref. Co. 28 1128
Hahl, Humble Oil & Ref. Co. 27 720
Duval Ranch Co., Magnolia Pet. Co. 16. 50
Duval Ranch Co., Magnolia Pet. Co. 15. 150
Duval Ranch Co., Magnolia Pet. Co. 12. 120
Duval Ranch Co., Magnolia Pet. Co. 13. 192
Duval Ranch Co., Magnolia Pet. Co. 11. 168
Duval Ranch Co., Texas Co. 3 960
Riggs, Texas Co. 7 240
Wendt, Texas Co. B-1 ..... gas
Weiderkehr, Sun Oil Co. 14 768
Weiderkehr, Sun Oil Co. 15 ..... gas
Weiderkehr, Sun Oil Co. 16 216
Weiderkehr, Sun Oil Co. 17 216
Weiderkehr, Sun Oil Co. 18 48
Weiderkehr, Sun Oil Co. 19 192
ECKERT POOL—BEXAR COUNTY
Sandemer, Trio Oil Corp. 6 6
Halbardier, Swearingen Oil Co. 16 6
Halbardier, Roseta Oil Co. 12 6
Beck, Gatlin Oil Co. 13 7
Brehm, F. H. Eckert & Son 8 11
EAGLE HILL—DUVAL COUNTY
Foster, S. R. C. Oil Co. 3 168
Foster, Shasta Oil Co. 2 96
Foster, Al Buchanan B-2 288
Wood-Welder, O. W. Killam 3 ..... abd
Wood-Welder, O. W. Killam 4 ..... abd
Duval Ranch Co., Texas Co. A-6 480
Foster, Shasta Oil Co. 1 50
Foster, Trinity Drillers 2 150
LAUREL POOL—WEBB COUNTY
Laurel, South Texas Prod. Co. 10 ..... abd
Rosenberg, South Texas Prod. Co. 17 .. abd
KOHLER POOL—DUVAL COUNTY
Kohler, Humble Oil & Ref. Co. 22 ..... abd
SARNOSA POOL—DUVAL COUNTY
Hernandez, Wortheimer Oil Corp. 2 ... 168
JACOB FIELD—McMULLEN COUNTY
Lark, Longhorn Oil Co. A-3 50
Lark, Kennon & Stephenson 1 ..... abd
S. R. C. FIELD—DUVAL COUNTY
Duval Ranch Co. 10 ..... abd
MARIANA FIELD—REFUGIO COUNTY
O'Connor, Humble Oil & Ref. Co. 10 ...1000
JENNINGS—ZAPATA COUNTY
Measles, United Prod. Co. 11 ..... gas

Wells completed 64
Production 15,110
Gas production 14,000,000
Abandoned 12

Miscellaneous Counties

ATASCOSA COUNTY
Blankenship, E. O. Burton 1 ..... abd
BEE COUNTY
Ruhman, Dash Prod. Co. 1 20
BELL COUNTY
Davenport, R. S. Wilson 1 ..... abd
BEXAR COUNTY
Jackel, Vogel & Flowers 1 ..... abd
Plant, LaSalle Oil Co. 1 ..... abd
Goeth, H. A. Pagenkopf 1 ..... abd
Breckenridge, F. E. Tegler 1 ..... abd
BROOKS COUNTY
Denman, Allen & Morris 1 ..... abd
Holbien, Atlas Prod. Co. 2 ..... abd
CALDWELL COUNTY
Lawler, F. L. Thompson 2 ..... abd
Price, Bob Rose B-1 ..... abd
August, Hope & Cole 1 ..... abd
Roebuck, Batts et al 3 ..... abd
COLORADO COUNTY
Jarecka, Colorado Corp. 1 ..... abd
DUVAL COUNTY
Gravis, J. W. Edward 1 ..... abd
Withers, P. R. Wilson 1 ..... abd
Duval Co. Ranch Co., Whitting 1 ..... abd
Weil, Shasta Oil Co. 1 ..... abd
Holzapel, W. A. Smith 1 ..... abd
DE WITT COUNTY
Hilgartner, Bunte, Inc. 1 ..... abd
FAYETTE COUNTY
Schwartz, R. H. Moffett 1 ..... water
GONZALES COUNTY
Bennett Botts, Volz & Shelling 1 ..... abd
Botts, H. J. Schaeffer 1 ..... abd
GUADALUPE COUNTY
McKee, L. E. Trout 1 ..... abd
Greenwood Est., Potter et al 1 ..... abd
Rosenbrook, J. A. Harper 2 ..... abd
JIM HOGG COUNTY
Martinez, Navarro Oil Co. 1 ..... abd
KARNES COUNTY
Rudd, Arrowhead Drlg. Co. 1 ..... abd
KERR COUNTY
Love, Evans et al 2 ..... abd
LASALLE COUNTY
Yeager, W. H. Wallace 1 ..... abd
Rogers, Equity Oil Co. 1 ..... abd
LIVE OAK COUNTY
Griffith, Ike Taylor 1 ..... abd
Byler, S. B. Hood 1 ..... abd
MAVERICK COUNTY
Chittim, Texas Gas Utilities, Inc. 8 ... abd
McMULLEN COUNTY
Hagist, Pitkin-Goldston Oil Co. 1 ..... abd
Wulf, Two Rivers Oil & Gas Co. 1 ..... abd
Wulf, Smith & Mowinkle 1 ..... abd
MILAM COUNTY
Clark, J. K. Wells et al 1 ..... abd
STARR COUNTY
Kelsey Bass, Goodwin & Yantis 4 ..... gas
Kelsey Gass, Goodwin & Yantis 3 ..... gas
TRAVIS COUNTY
Reinhardt, Weaver & Osborn 1 ..... abd
Bengston, Marts & Beavens 1 ..... abd
Sandahl, Marts & Beavens 1 ..... abd
WEBB COUNTY
Laurel, Weekly Oil Corp. 1 ..... abd
Yeager-Stroman, Frank Gravis 1 ..... abd
WILLIAMSON COUNTY
Forwood, Pederson 1 ..... abd
Rumel, R. L. Batts 1 ..... abd
ZAPATA COUNTY
Gopher Trust Estate, A. H. Wray 4 .. gas
Whitehead, Texas Co. 35 ..... abd
L. Haines Est., D. G. DeLaney 1 ..... abd

Wells completed 49
Production 20
Tests abandoned 46
Gas production 13,000,000

Panhandle Fields

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	2	0	1	1
Gray	18	4,099	0	0
Wheeler	3	906	0	0
Total January	23	5,005	1	1
Total December	23	7,262	1	5
Difference	0	2,257	0	4

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Carson	1	0	6	7
Childress	0	2	0	2
Gray	19	3	29	51
Hutchinson	4	1	17	32
Hemphill	0	1	0	1
Moore	0	2	1	3
Roberts	0	1	0	1
Wheeler	6	2	8	16
Total January	30	12	61	103
Total December	18	17	45	80
Difference	12	5	16	23

WELLS COMPLETED
CARSON COUNTY
E. S. Fentress, No. 1 T. E. Barnard... gas
Reiger et al, No. 1 Foster ..... abd

Completions 2
Gas wells 1
Abandoned 1

GRAY COUNTY
Dixon Creek Oil & Ref. Co., No. 5 Archer 413
Phillips Pet. Co., No. 4 Jackson 100
Sinclair Prairie Oil Co., No. 1 Langham. 133
Southern Pet. Expl. Co., No. 5 McConnell 35
Sun Oil Co., No. 2-B Combs-Worley 577
Wilcox Oil & Gas Co., No. 24 Combs-Worley 164
Skelly Oil Co., No. 3-A Webb 125
Dixon Creek Oil & Ref. Co., No. 5 Archer 426
Sinclair Prairie Oil Co., No. 2 Langham. 8
Sunray Oil Co., No. 6 Cook-Faulkner... 382
Sunray Oil Co., No. 8 Cook-Faulkner... 382
Hoffman Oil Co., No. 2 Finley 210
Skelly Oil Co., No. 3-A Webb 268
Champlin Ref. Co., No. 6 McLaughlin... 135
Dixon Creek Oil & Ref. Co., No. 3 Allam 175
Sinclair Prairie Oil Co., No. 4 Worley-Reynolds 20
Texas Co., No. 11 Cook-Faulkner 550
F. H. Yealy, No. 2 Crank 15

Completions 18
Initial production 4099

WHEELER COUNTY
Bell Oil & Gas Co., No. 1 D'Spain 642
Magic Oil & Gas Co., No. 2 Koons 54
Skelly Oil Co., No. 1 Huselby 210

Completions 3
Initial production 906

Michigan Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Midland	22	14,110	1	0	26	30	56
Isabella	5	120	1	2	21	18	39
Clare	0	0	0	0	3	1	4
Oceana	3	410	1	0	6	11	17
Lake	0	0	0	0	0	2	2
Iosco	0	0	0	0	1	0	1
Gratiot	0	0	0	0	3	2	5
Cass	0	0	0	0	3	1	4
Kent	0	0	0	0	1	2	3
Emmett	0	0	0	0	1	1	2
Saginaw	2	0	2	0	2	2	4
Montmorency.	0	0	0	0	3	0	3
Sanilac	0	0	0	0	3	0	3
Newyago	0	0	0	0	0	2	2
Shiawasse ...	0	0	0	0	1	3	4
Allegan	0	0	0	0	1	2	3
Livingston ...	0	0	0	0	1	2	3
Osceola	1	50	0	0	0	1	1
Alpena	0	0	0	0	1	1	2
Cheboygan	0	0	0	0	0	1	1
Oakland	0	0	0	0	0	1	1
Macomb	0	0	0	0	1	1	2
Genessee	0	0	0	0	1	0	1
Mecosta	1	0	0	1	0	0	0
Monroe	0	0	0	0	0	1	1
St. Clair	0	0	0	0	3	0	3
Muskegon	1	0	1	0	7	6	13
Ogemaw	3	0	3	0	7	10	17
Montcalm	1	0	0	1	0	0	0
Lapeer	1	0	1	0	0	0	0
Gladwin	0	0	0	0	0	1	1
Arenac	0	0	0	0	0	1	1
Iona	0	0	0	0	0	1	1
Eaton	0	0	0	0	0	1	1
Total Jan. .	40	14,690	10	4	96	105	201
Total Dec. .	27	9,866	3	1	111	119	230
Difference .	13	4,824	7	3	15	14	29

WELLS COMPLETED
MIDLAND COUNTY
Greendale — John Bolan, Carl Adams, trustee, 1 30
Pringle heirs, Michigan Prod. & Ref. Co. 2 250
Macomber, Burland & Travis 1 25
Mae Spreerbrecker, W. L. McClanahan 1 165
John Moffett, Pure Oil Co. 3 25
Mattie Yost, Pure Oil Co. 3-A 90
Porter—Hathaway, McClanahan Oil Co. 3 2000
Hathaway, Geo. C. Hanners 3 1640
Ray Caywood, O. H. O'Neal 1 ..... dry
H. Carter, Stewart & Gordon 3 600
Miller estate, Sun Oil 4 100
F. S. Emery, Stoddard & Darke 2 ... 2500
Williams, Wells Bros. 1 200
Forney, Campbell-Vera Nunn, trus. 1 150
H. Neitzke, Davis Oil 4 1200
H. Neitzke, Davies Oil 5 1400
E. Bushre, Smith Pet. 3 60
R. Hock, Fred W. Turner & Co. 2 .. 150
F. W. Howard, Pure Oil 4 900
W. Neitzke, Pure Oil 3 2500
Younglove, Pure Oil 2 65
J. H. Miller, Pure Oil 1-B 60

Wells completed 22
Production 14,110
Dry 1

ISABELLA COUNTY
Vernon—Callahan, L. G. Thompson 1 .. dry
Denver—Marthey, Michigan G. & O. Corp. 5 60
Chippewa—Krayske & Co., Gerland F. Wilcox, trus., 1 ..... dry
Broomfield—Wonser, D. F. Jones 1 ... gas
S. E. Willey, Pure Oil 5 ..... gas
Isabella—McReavy, Wittmer Co., Inc. 1 60

Wells completed 6
Production 120
Dry 2
Gas 2

OCEANA COUNTY
Hart — Oceana Grabge, Clarence Johnson 1 10
H. Nelson, H. C. Nelson 1 200
Ester Doolittle, Reed Oil Co. 1 ..... dry
Elridge—Spitler & Co., H. C. 1 200

Wells completed 4
Production 410
Dry 1

SAGINAW COUNTY
Richland — Pat Foy, Hayden & Townsend, trus., 1 ..... dry
Burch Run—H. J. Baller, Crabon Oil Co., Inc. 1 ..... dry

Wells completed 2
Dry 2

OSCEOLA COUNTY
Evart—Fletcher, Sun Oil 1 50
MECOSTA COUNTY
Austin—Robt. I. Fish, James M. Taggart, Inc., 4 ..... gas
MUSKEGON COUNTY
Laketon—Adam Skrotski, Eddie Self 1 dry
OGEMAW COUNTY
West Branch—Mary Griffin, W. J. Sovereign 1 ..... dry
Ogemaw—Wm. Gray, Ira Sciefly, trus. 1 dry
Ogemaw Coal Co., Edward Christman 1 ..... dry

Wells completed 3
Dry 3

MONTCALM COUNTY
Richland—Beach, Wm. J. Wilson, trus. 1 ..... gas
LAPEER COUNTY
Oregon — Branick, F. W. Kehlet & Flynn 1 ..... dry

Gulf Coast Fields

TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Drg.	Ttl.
Arriola	0	0	0	0	0	1	1
Barbers Hill.	6	2,675	2	0	1	15	16
Batson	2	20	0	0	0	3	2
Big Creek ..	1	0	1	0	0	1	1
Blue Ridge..	1	100	0	0	0	0	0
Buckeye	0	0	0	0	0	2	2
Clay Creek..	0	0	0	0	0	2	2
Cleveland ..	1	1,300	0	0	0	4	4
Coleto Creek.	1	0	1	0	1	1	2
Conroe	29	42,910	0	0	2	18	20
Damon							
Mound ...	1	97	0	0	1	0	1
Esperson ...	0	0	0	0	0	2	2
Fannett	1	120	0	0	0	0	0
Garwood ...	1	100	0	0	1	0	1
Goose Creek	0	0	0	0	1	3	4
Greta	20	3,810	2	1	3	10	13
Hankamer ..	0	0	0	0	1	0	1
High Island.	3	380	2	0	1	4	5
Hull	9	6,880	0	0	1	12	13
Humble	2	40	1	0	0	1	1
Livingston ..	4	0	3	1	0	2	2
Louise	3	500	1	0	0	4	4
Manvel	1	890	0	0	1	3	4
McFaddin district	0	0	0	0	0	2	2
Mykawa ...	0	0	0	0	0	2	2
Orange	2	5	1	0	0	1	1
Orchard	0	0	0	0	0	1	1
Pierce Junction .	0	0	0	0	0	3	3
Pledger	0	0	0	0	0	1	1
Port Neches.	2	600	0	1	0	2	2
Saratoga ...	1	15	0	0	0	2	2
Sour Lake..	0	0	0	0	0	1	1
Stratton Ridge	0	0	0	0	0	1	1
Thompson ..	7	2,383	2	0	1	4	5
Tomball	15	5,548	1	3	1	7	8
Miscellaneous	15	0	14	1	7	44	51
Ttl. Jan. ..	128	68,353	32	7	23	158	181
Ttl. Dec. ..	116	80,038	29	4	55	180	235
Difference	12	11,685	3	3	32	22	54

LOUISIANA COAST

	Comp.	Prod.	Abd.	Gas	Rigs	Drg.	Ttl.
Black Bayou	1	340	0	0	0	0	0
Caillou Island	0	0	0	0	0	1	1
Cameron Meadows .	1	595	0	0	1	3	4
Choctaw ...	1	1,260	0	0	1	0	1
Darrow	0	0	0	0	0	1	1
Edgerly	0	0	0	0	0	4	4
Gueydan ...	0	0	0	0	0	2	2
Hackberry .	0	0	0	0	1	5	6
Iowa	4	2,340	1	0	2	4	6
Jennings ...	0	0	0	0	0	1	1
Lake Barre.	1	0	1	0	0	3	3
Lake Pelto..	0	0	0	0	0	2	2
Leesville ...	0	0	0	0	0	5	5
Lockport ...	0	0	0	0	0	4	4
Roanoke ...	0	0	0	0	0	2	2
Part Barre..	1	755	0	0	0	3	3
Sorrento	0	0	0	0	0	2	2
Starks	0	0	0	0	0	2	2
Sulphur	3	1,800	0	0	1	4	5
Sweet Lake.	0	0	0	0	0	1	1
Vinton	5	740	0	0	1	6	7
White Castle	0	0	0	0	0	1	1
Miscellaneous	2	0	2	0	3	16	19
Ttl. Jan...	18	7,830	4	0	10	72	82
Ttl. Dec...	20	5,013	9	1	23	76	99
Difference	2	2,817	5	1	13	4	17
Ttl. Gulf Coast ..	146	76,183	36	7	33	230	263
Ttl. Dec...	136	85,051	38	5	78	256	334
Difference	10	8,868	2	2	45	26	71

TEXAS

WELLS COMPLETED
BARBERS HILL—CHAMBERS COUNTY
Gulf Fisher, Mills Bennett Prod. Co. 5.. 800
Wilburn, Sinclair Prairie Oil Co. 17 (first hole) ..... abd
J. Wilburn, Sun Oil Co. 14 590
Wilburn, Texas Co. 6 160

Wilburn, Texas Gulf Prod. Co. 3 1125
Chambers, Yount Lee Oil Co. 1 ..... abd

Wells completed 6
Production 2675
Abandoned 2

BATSON—HARDIN COUNTY
Paraffine, Acorn Oil Co. 74 10
Knight, Ada Belle Oil Co. 163 10

Wells completed 2
Production 20

BIG CREEK—FORT BEND COUNTY
Ahlers, Gulf Streams, Inc. 2 ..... abd

BLUE RIDGE—FORT BEND COUNTY
Blakeley, San Jacinto Oil Co. 3 100

CLEVELAND—LIBERTY COUNTY
Kirby, Gulf Prod. Co. 1 1300

COLETO CREEK—VICTORIA COUNTY
Dietzel, Cox & Calvert 1 ..... abd

CONROE—MONTGOMERY COUNTY
Krohn, Alpha Pet. Co. 2-B 960
Keystone Mills, Gulf Coast Drlg. & Prod. Co. 19-A 480
Alexander, Humble O. & R. Co. 1-F ..*relief
American Natl. Bank, Humble O. & R. Co. 1 1850
Cartwright, Humble O. & R. Co. 13 1850
Cartwright, Humble O. & R. Co. 4-B 910
Madeley, Humble O. & R. Co. 17 1945
Madeley, Humble O. & R. Co. 38 1920
Moore, Humble O. & R. Co. 44 2200
Moore, Humble O. & R. Co. 45 2015
Rooker, Humble O. & R. Co. 7 2040
South Texas Dev. Co., Humble O. & R. Co. 29-A 145
South Texas Dev. Co., Humble O. & R. Co. 56-A 2135
South Texas Dev. Co., Humble O. & R. Co. 55-A 2015
South Texas Dev. Co., Humble O. & R. Co. 60 1485
South Texas Dev. Co., Humble O. & R. Co. 4-C 1600
South Texas Dev. Co., Humble O. & R. Co. 1-G 1655
Etheridge, Strake Pet., Inc. 5 2160
Krohn, Strake Pet., Inc. 5 1200
Keystone Mills, Sun Oil Co. 8 540
McDonald, Sun Oil Co. 3 500
Allen, Texas Unity Oil Co. 1-B 2300
American Natl. Bank, Tide Water Oil Co. 2015
American Natl. Bank, Tide Water Oil Co. 4 1440
Dean, Tide Water Oil Co. 14 2110
Krohn, Tide Water Oil Co. 8 2230
Lewis, Tide Water Oil Co. 30 1580
Lewis, Tide Water Oil Co. 31-A 1630

Wells completed 29
Production 42,910

*Relief well not included in totals.

DAMON MOUND—BRAZORIA
Wisdom, Wisdom et al 1 97

FANNETT—JEFFERSON COUNTY
Thomas, Gulf Prod. Co. 14 120

GARWOOD—COLORADO COUNTY
Ream, Plymouth Oil Co. 2 100

GRETA—REFUGIO COUNTY
J. M. O'Brien, Atlantic Oil Prod. Co. 2-J 148
J. M. O'Brien, Atlantic Oil Prod. Co. 4-A 196
J. J. O'Brien, Atlantic Oil Prod. Co. 2-B 148
Heard, Atlantic and Heyser & Heard 2 196
J. J. O'Brien, Blanco Oil Co. 3-A 150
J. M. O'Brien, Circle W Oil Co. 6 300
J. M. O'Brien, Dash Prod. Co. 2-B 300
J. F. B. Heard, Floboots Oil Corp. 2 .. abd
F. Heard, Humble O. & R. Co. 2 850
J. F. B. Heard, Humble O. & R. Co. 1.. 117
J. M. O'Brien, Edwin M. Jones 5-A 86
J. M. O'Brien, Edwin M. Jones 8-A ... 100
O'Connor, Standard Oil Co. of Kansas 1 11
J. M. O'Brien, Stanolind O. & G. Co. 1-B, Blk. 11 300
J. M. O'Brien, Stanolind O. & G. Co. 2-B, Blk. 13 120
J. M. O'Brien, Stanolind O. & G. Co. 4-K 240
Welder, Stanolind O. & G. Co. and Atkins & O'Neil 1 128
Welder, Trinity Drillers 1 ..... abd
Fox estate, United Prod. Co. 11 420
Fox estate, United Prod. Co. 12 ..... gas

Wells completed 20
Production 3810
Abandoned 2
Gas 1

HIGH ISLAND—GALVESTON COUNTY
Broussard & Orme, Yount Lee Oil Co. 2-B ..... abd
Cade, Yount Lee Oil Co. 38 ..... abd
Smith, Yount Lee Oil Co. 19 360

Wells completed 3
Production 360
Abandoned 2

HULL—LIBERTY COUNTY
Briggs, Gulf Prod. Co. 1 435
Phoenix, Gulf Prod. Co. 94 1000
Hooks-Guedry, Humble O. & R. Co. 31 . 950
Hooks-Guedry, Humble O. & R. Co. 33.. 935
Phoenix, Miramar Oil Corp. 2-B 1000
Dolbear, Republic Prod. Co. 94 ..... abd
Carr, Sun Oil Co. 2-A 230
Hooks fee, Yount Lee Oil Co. 4 1280
Hooks fee, Yount Lee Oil Co. 6 1050

Wells completed 9
Production 6880
Abandoned 1

HUMBLE—HARRIS COUNTY
Bender, I. D. Clay 6 ..... abd
Stevenson, Texas Co. 40 40

Wells completed 2
Production 40
Abandoned 1

LIVINGSTON—POLK COUNTY
Carter & Bros., Harrison & Abercrombie 2 ..... abd
Granbury, Humble O. & R. Co. 6 ..... abd
Duff, Shell Pet. Corp. 1 ..... gas
Granbury, Humble O. & R. Co. 8 ..... abd

Wells completed 4
Abandoned 3
Gas 1

LOUISE—WHARTON COUNTY
Kuntze, Pure Oil Co. 1 100
McIntyre, Pure Oil Co. 1 400
Hudgins, Smith & McDonald 1 ..... abd

Wells completed 3
Production 500
Abandoned 1

MANVEL—BRAZORIA COUNTY
Belches, Texas Co. 6-B 890

ORANGE—ORANGE COUNTY
McGuire, Birmingham Oil Co. 1 ..... abd
Carbello, S. A. Emerson 8 5

Wells completed 2
Production 5
Abandoned 1

PORT NECHES—ORANGE COUNTY
Kuhn, Texas Co. 4 600
Kuhn, Texas Co. 5 ..... gas

Wells completed 2
Production 600
Gas 1

SARATOGA—HARDIN COUNTY
Jordit fee, Rio Bravo Oil Co. 104 15

THOMPSON—FORT BEND COUNTY
Hammerstram, Gulf Prod. Co. 3 85
George, Humble O. & R. Co. and Gulf Prod Co. 9 ..... abd
George, Humble O. & R. Co. and Gulf Prod. Co. 5-A ..... abd
Lockwood & Sharp, Humble O. & R. Co. and Gulf Prod. Co. 21-A 1248
Lockwood & Sharp, Humble O. & R. Co. and Gulf Prod. Co. 25-A 380
Lockwood & Sharp, Humble O. & R. Co. and Gulf Prod. Co. 21-B 670
Woltera, Humble O. & R. Co. 2 ..... abd

Wells completed 7
Production 2383
Abandoned 2

TOMBALL-HARRIS AND MONTGOMERY COUNTIES
Bode, Amerada Pet. Corp. and Stanolind O. & G. Co. 1 ..... gas
Nelson, Amerada Pet. Corp. and Stanolind O. & G. Co. 1 525
Otto Rudel, Amerada Pet. Corp. and Stanolind O. & G. Co. 1 660
Otto Rudel, Amerada Pet. Corp. and Stanolind O. & G. Co. 2 430
J. L. Moody, Humble O. & R. Co. 1 ... 504
Quilter, Humble O. & R. Co. 2 504
Scherer, Humble O. & R. Co. 1 600
Theis, Humble O. & R. Co. 1 360
Tresichel, Humble O. & R. Co. 1 ..... gas
Werndorf, Humble O. & R. Co. 1 645
Theis, Stanolind O. & G. Co. and Amerada Pet. Corp. 2 480
Theis, Stanolind O. & G. Co. and Amerada Pet. Corp. 3 ..... abd
E. Hillegist, Texas Co. 1 ..... gas
E. Mueller, Texas Co. 3 720
Petrich, Windsor Oil Co. 1 120

Wells completed 15
Production 5548
Abandoned 1
Gas 3

Miscellaneous Texas

BURLESON COUNTY
John Bird Sur., Young, Berry & Hayes 1 ..... abd
Lawrence Sur., Palinsky 2 ..... abd

FAYETTE COUNTY
J. Winn Sur., Andera, Colorado Oil Corp. 1 ..... abd

FORT BEND COUNTY
Ed Robertson Sur., Wood, O'Connell & Miller, Quintana Oil Co. 1 ..... abd

HARRIS COUNTY
Jordan Sur., Cochran, H. B. Jordan 1.. abd
S. Kelly Sur., Burt & Griffith, F. C. Russell et al 1 ..... abd
Sarah McKissick Sur., Gore, Texana Oil Co. 1 ..... abd
J. Cunningham Sur., Caddock, Young et al 1 ..... abd

JEFFERSON COUNTY
Brown & Caswell Sur., Bevil, Texas Co. 1 ..... abd

MATAGORDA COUNTY
D. McCarthy Sur., Hawkins, Oils Consolidated 1 ..... abd

MONTGOMERY COUNTY
H. Blood Sur., Rolphs, Deering & Frazier 1 ..... abd
G. S. Thomas Sur., Kirby, Dick Schwab 2 ..... gas

REFUGIO COUNTY
J. M. Aldrete Sur., F. B. Rooke, C. B. Bunte et al 1 ..... abd

TYLER COUNTY
W. Barclay Sur., A. V. Seamans, Denton & Akin 1 ..... abd

WHARTON COUNTY
Biggam Sur., Reid, Harvey & Rush 1.. abd

Wells completed 15
Abandoned 14
Gas 1

LOUISIANA COAST

BLACK BAYOU—CAMERON PARISH
Watkins, Shell Pet. Corp. 17 340

CAMERON MEADOWS—CAMERON PARISH
School Land, Burton Sutton Oil Co. 2 .. 595

CHOCTAW—IBERVILLE PARISH
Myrtle Grove, Standard Oil Co. (La.) 5.1260

IOWA—CALCASIEU AND JEFFERSON DAVIS PARISHES
Fontenot, Barnsdall Oil Co. 3 1360
Mitchell LeBleu, Magnolia Pet. Co. 1 .. abd
Waite, Magnolia Pet. Co. 5 840
Tuten, Shell Pet. Corp. 1 140

Wells completed 4
Production 2340
Abandoned 1

LAKE BARRE—TERREBONNE PARISH
Lake Barre-L.L.&E., Texas Co. 25 ..... abd

LAKE WASHINGTON—PLAQUEMINES PARISH
Louisiana State, Humble O. & R. Co. 3 abd

PORT BARRE—ST. LANDRY PARISH
Botney Bay, Texas Co. 18 755

SULPHUR—CALCASIEU PARISH
Fee, Union Sulphur Co. 787 1500
Fee, Union Sulphur Co. 789 300

Wells completed 2
Production 1800

VINTON—CALCASIEU PARISH
Gardner, Gulf Refining Co. 8 300
Garner-Noble-Gray, Gulf Ref. Co. 41 .. 225
Gray, Vinton Pet. Co. 29 35
Wilson Strip, Wilson-Broach 12 160
Mayo, L. M. York 1 20

Wells completed 5
Production 740

Miscellaneous Louisiana

CAMERON PARISH
Calcasieu Lake—State, Texas Co. 9-A .. abd

TERREBONNE PARISH
Bay St. Elaine—School Board, Texas Co. 2 ..... abd

Wells completed 2
Abandoned 2

Louisiana Fields

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Avoyelles ..	0		0	0	0	1	1
Beauregard ..	0		0	0	0	1	1
Bienville ...	0		0	0	1	1	2
Caddo	2		0	1	1	11	12
Caldwell ...	0		0	0	0	2	2
Catahoula ..	0		0	0	0	1	1
Claiborne ..	0		0	0	0	1	1
Concordia ..	0		0	0	0	2	2
DeSoto	0		0	0	0	1	1
Grant	0		0	0	0	1	1
Jackson	0		0	0	0	2	2
Morehouse ..	0		0	0	0	1	1
Natchitoches	0		0	0	0	2	2
Ouachita ..	0		0	0	1	2	3
Rapides	0		0	0	0	1	1
Red River ..	0		0	0	0	1	1
Sabine	0		0	0	0	2	2
Tensas	0		0	0	0	1	1
Union	0		0	0	0	1	1
Vernon	0		0	0	0	1	1
Webster	0		0	0	0	1	1
Winn	0		0	0	0	1	1
Ttl. Jan...	2		0	0	0	2	2
Ttl. Dec...	0		0	0	0	1	1
Difference	2		0	0	0	1	1

WELLS COMPLETED
HINDS COUNTY
24-7n-1e McRea, B. B. Jones 1 ..... dry

RANKIN COUNTY
18-5n-3e Stone, B. B. Jones 1 ..... dry

TALLAHATCHIE COUNTY
28-26n-3e Bunton, R. E. Collins 1 .... dry

Alabama Fields

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Baldwin	0		0	0	0	1	1
Lamar	0		0	0	0	1	1
Washington .	1		0	2	0	0	0
Ttl. Jan...	1		0	1	0	0	2
Ttl. Dec...	0		0	0	0	0	3
Difference	1		0	1	0	0	1

WELLS COMPLETED
25-5n-4e Ovant, Danciger O. & G. Co. 1 dry

East Texas Border Counties

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Cass	0		0	0	0	1	1
Harrison ...	0		0	0	1	2	2
Marion	0		0	0	0	2	2
Panola	2	15	1	0	1	4	5
Shelby	0		0	0	0	1	1
Ttl. Jan...	2	15	1	0	2	10	12
Ttl. Dec...	3	40	1	0	4	12	16
Difference	1	25	0	0	2	2	4

WELLS COMPLETED
PANOLA COUNTY
S. B. Hendricks heirs, Burnett Lbr. Co., Mid-Con Drlg. Co. 1 ..... dry
Winnie Mann heirs, Wooten estate, Southern Prod. Co. 2 15

Rocky Mountain Area

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Eddy	4		0	2	2	1	8
Lea	2	5,164	0	0	2	5	7
McKinley	1		5	0	0	0	5
San Juan	0		0	0	0	1	14
San Miguel ...	0		0	0	0	0	4
Santa Fe	0		0	0	0	0	3
Valencia	0		0	0	0	0	3
Miscellaneous .	0		0	0	0	1	10
Total Jan. ..	7	5,169	2	2	5	5	52
Total Dec. ..	3	10	1	1	2	55	57
Difference ..	4	5,159	1	1	3	3	0

WELLS COMPLETED
29-20-9n Frank Weber et al 1 5
24-25-36 Ascarate, Southern Pet. Expl. 1 4464
13-25-36 Lindley, Humble O. & R. 3-A. 700
25-26-29 Levers, Warren L. Todd 1 .. dry
22-17-29 State, Leonard-Barnsdall 9 .. gas
10-19-28 State, Flynn, Welch & Yates 67 ..... dry
5-17-28 Vandagriff, Pecos Val. Gas Co. 8 ..... gas

Wells completed 7
Production 5169
Gas 460,000
Dry and abandoned 2

WYOMING

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Big Horn	0		0	0	1	6	7
Carbon	0		0	0	0	6	6
Converse	0		0	0	0	2	2
Crook	0		0	0	0	7	7
Fremont	0		0	0	0	3	3
Hot Springs ..	0		0	0	0	3	3
Natrona	0		0	0	0	3	7
Niobrara	1		10	0	0	0	2
Sheridan	1		0	1	0	0	1
Sweetwater ...	0		0	0	0	1	3
Sublet	0		0	0	0	0	3
Uinta	0		0	0	0	0	6
Washakie	1		0	1	0	2	2
Weston	1		75	0	0	3	2
Miscellaneous .	0		0	0	0	0	6
Total Jan. ..	4		85	2	0	10	59
Total Dec. ..	5		115	1	2	7	62
Difference ..	1		30	1	2	3	3

WELLS COMPLETED
23-46-64 Weston Oil Trust 3 75
39-48-90 Wheeler, D. L. McDonald et al dry
15-55-85 Allison, Houghton & Mumper 1-A ..... abd
34-36-65 Bell, Continental Oil Co. 1... 10

Wells completed 4
Production 85
Dry and abandoned 2

Arkansas Fields

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Arkansas ..	0		0	0	0	1	1
Ashley	0		0	0	1	0	1
Columbia ..	1		0	1	0	1	1
Conway	0		0	0	0	1	1
Hempstead .	0		0	0	0	1	1
Jefferson ..	0		0	0	0	1	1
Lafayette ..	0		0	0	0	2	2
Little River.	0		0	0	0	2	2
Lonoke	0		0	0	0	0	1
Miller	2		0	2	0	2	12
Nevada	0		0	0	0	1	2
Ouachita	0		0	0	0	0	3
Poinsett	0		0	0	0	0	1
Union	3		0	3	0	2	6
Woodruff ..	0		0	0	0	0	1
Yell	0		0	0	0	0	1
Ttl. Jan...	6		0	6	0	8	36
Ttl. Dec...	3		82	1	0	8	38
Difference	3		82	5	0	0	2

WELLS COMPLETED
COLUMBIA COUNTY
13-17-22 Fullenweider, Kendall Oil Co. 2 dry

MILLER COUNTY
29-18-27 Miller Land & Timber Co., Black Diamond Oil Co. - .. dry
33-15-26 Smith, Lee Timberlake 1 .... dry

UNION COUNTY
34-19-18 Murphy Land Co., D. S. Brooks 1 ..... dry
9-19-11 Rowland, V. V. Bull 1 ..... dry
19-17-15 Hammond, Sam M. Richardson 1 ..... dry

Mississippi Fields

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Greene	0		0	0	0	1	1
Hinds	1		0	1	0	0	2
Lamar	0		0	0	0	1	1
Madison	0		0	0	0	0	1
Newton	0		0	0	0	0	1
Rankin	1		0	1	0	1	3
Scott	0		0	0	0	0	1
Simpson	0		0	0	0	0	1
Tallahatchie.	1		0	1	0	0	0
Walthall ...	0		0	0	0	1	0
Warren	0		0	0	0	0	1
Wayne	0		0	0	0	0	1
Wilkinson ..	0		0	0	0	0	1
Ttl. Jan...	3		0	3	0	3	14
Ttl. Dec...	2		0	1	1	5	16
Difference	1		0	2	1	2	2

WELLS COMPLETED
HINDS COUNTY
24-7n-1e McRea, B. B. Jones 1 ..... dry

RANKIN COUNTY
18-5n-3e Stone, B. B. Jones 1 ..... dry

TALLAHATCHIE COUNTY
28-26n-3e Bunton, R. E. Collins 1 .... dry

Alabama Fields

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Baldwin	0		0	0	0	1	1
Lamar	0		0	0	0	1	1
Washington .	1		0	2	0	0	0
Ttl. Jan...	1		0	1	0	0	2
Ttl. Dec...	0		0	0	0	0	3
Difference	1		0	1	0	0	1

WELLS COMPLETED
25-5n-4e Ovant, Danciger O. & G. Co. 1 dry

East Texas Border Counties

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Cass	0		0	0	0	1	1
Harrison ...	0		0	0	1	2	2
Marion	0		0	0	0	2	2
Panola	2	15	1	0	1	4	5
Shelby	0		0	0	0	1	1
Ttl. Jan...	2	15	1	0	2	10	12
Ttl. Dec...	3	40	1	0	4	12	16
Difference	1	25	0	0	2	2	4

WELLS COMPLETED
PANOLA COUNTY
S. B. Hendricks heirs, Burnett Lbr. Co., Mid-Con Drlg. Co. 1 ..... dry
Winnie Mann heirs, Wooten estate, Southern Prod. Co. 2 15

Rocky Mountain Area

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Eddy	4		0	2	2	1	8
Lea	2	5,164	0	0	2	5	7
McKinley	1		5	0	0	0	5
San Juan	0		0	0	0	1	14
San Miguel ...	0		0	0	0	0	4
Santa Fe	0		0	0	0	0	3
Valencia	0		0	0	0	0	3
Miscellaneous .	0		0	0	0	1	10
Total Jan. ..	7	5,169	2	2	5	5	52
Total Dec. ..	3	10	1	1	2	55	57
Difference ..	4	5,159	1	1	3	3	0

WELLS COMPLETED
29-20-9n Frank Weber et al 1 5
24-25-36 Ascarate, Southern Pet. Expl. 1 4464
13-25-36 Lindley, Humble O. & R. 3-A. 700
25-26-29 Levers, Warren L. Todd 1 .. dry
22-17-29 State, Leonard-Barnsdall 9 .. gas
10-19-28 State, Flynn, Welch & Yates 67 ..... dry
5-17-28 Vandagriff, Pecos Val. Gas Co. 8 ..... gas

Wells completed 7
Production 5169
Gas 460,000
Dry and abandoned 2

WYOMING

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Big Horn	0		0	0	1	6	7
Carbon	0		0	0	0	6	6
Converse	0		0	0	0	2	2
Crook	0		0	0	0	7	7
Fremont	0		0	0	0	3	3
Hot Springs ..	0		0	0	0	3	3
Natrona	0		0	0	0	3	7
Niobrara	1		10	0	0	0	2
Sheridan	1		0	1	0	0	1
Sweetwater ...	0		0	0	0	1	3
Sublet	0		0	0	0	0	3
Uinta	0		0	0	0	0	6
Washakie	1		0	1	0	2	2
Weston	1		75	0	0	3	2
Miscellaneous .	0		0	0	0	0	6
Total Jan. ..	4		85	2	0	10	59
Total Dec. ..	5		115	1	2	7	62
Difference ..	1		30	1	2	3	3

WELLS COMPLETED
23-46-64 Weston Oil Trust 3 75
39-48-90 Wheeler, D. L. McDonald et al dry
15-55-85 Allison, Houghton & Mumper 1-A ..... abd
34-36-65 Bell, Continental Oil Co. 1... 10

Wells completed 4
Production 85
Dry and abandoned 2

COLORADO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Archuleta	0	0	0	0	1	4	5
Boulder	0	0	0	0	0	4	4
Elbert	0	0	0	0	0	3	3
Jackson	0	0	0	0	0	5	5
Larimer	0	0	0	0	0	5	5
Las Animas	0	0	0	0	0	2	2
Moffat	1	0	1	0	0	4	4
Morgan	0	0	0	0	1	1	2
Routt	0	0	0	0	1	1	2
Weld	0	0	0	0	0	3	3
Miscellaneous	0	0	0	0	1	18	19
Total Jan.	1	0	1	0	4	50	54
Total Dec.	2	0	1	1	5	52	57
Difference	1	0	0	1	1	2	3

WELLS COMPLETED

9-11-101 Hatch, Mountain Fuel Supply Co. 1 ..... dry

MONTANA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Carbon	0	0	0	0	0	4	4
Fergus	0	0	0	0	0	3	3
Glacier	4	427	1	0	5	17	22
Golden Valley	1	0	1	0	0	0	0
Liberty	0	0	0	0	0	4	4
Petroleum	0	0	0	0	0	3	3
Teton	0	0	0	0	0	3	3
Toole	0	0	0	0	0	6	6
Miscellaneous	0	0	0	0	1	7	8
Total Jan.	5	427	2	0	6	47	53
Total Dec.	8	215	2	2	5	53	58
Difference	3	212	0	2	1	6	5

WELLS COMPLETED

28-6n-22 Golden Valley Oil Co. 1 ..... dry
35-35-6w Van de Mar, Madeau Bros. 1 .. 217
24-34-6w Miller, R. C. Tarrant 2 ..... dry
2-34-6w Seeba, Montana Power Gas Co. 1 173
15-34-6w Getty, Commonwealth Pet. Co. 1 37

Wells completed 5
Production 427
Dry and abandoned 2

UTAH

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
San Juan	3	0	3	0	0	2	2
Miscellaneous	0	0	0	0	1	12	13
Total Jan.	3	0	3	0	1	14	15
Total Dec.	0	0	0	0	1	17	18
Difference	3	0	3	0	0	3	3

WELLS COMPLETED

34-29-20 Western States, Dev. Co. 1 .. dry
34-29¼-20 Deseret Pet. Co. 1 ..... dry
7-42-19 W. E. Neville 7 ..... abd

Wells completed 2
Dry and abandoned 3

Indiana Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Gibson	1	0	1	0	0	2	2
Pike	0	0	0	0	0	6	6
Sullivan	0	0	0	0	0	1	1
Randolph	0	0	0	0	0	1	1
Daviess	2	0	1	1	0	2	2
Warrick	1	0	1	0	0	2	2
Spencer	1	0	1	0	0	2	2
Perry	4	55	2	0	0	2	2
Greene	0	0	0	0	0	1	1
St. Joe	0	0	0	0	0	1	1
Harrison	1	0	0	1	0	1	1
Jay	4	0	0	4	0	0	0
Porter	0	0	0	0	0	1	1
Stark	0	0	0	0	0	1	1
Henry	0	0	0	0	0	1	1
Knox	3	30	1	1	0	1	1
Martin	1	0	1	0	0	1	1
Vanderburg	3	75	0	0	0	8	8
Shelby	0	0	0	0	0	1	1
Hendricks	0	0	0	0	0	1	1
Total Jan.	21	160	8	7	0	35	35
Total Dec.	23	272	8	7	1	41	42
Difference	2	112	0	0	1	6	7

WELLS COMPLETED

GIBSON COUNTY

Barton—M. E. Duncan, Gem Oil Corp. 2 dry

PIKE COUNTY

Washington—J. L. McRoberts, Andrews & Co. 1, 2, 3 ..... abd
Madison—Elza Tame, Murphy Oil 3 ... abd
Clay—E. R. Catt, A. B. Bement 1 ..... abd

Abandoned 5

DAVIESS COUNTY

Steele—H. F. Freund, Ohio Oil 1 ..... dry
Veale—J. Daviess, L. G. Gee & Co. 1 .. abd
Barton—Ada Walton, Knox Engineering Corp. 1 ..... gas

Wells completed 2
Gas 1
Dry 1
Abandoned 1

WARRICK COUNTY

Anderson—Ora Smith, Pennsylvania-Indiana Oil 1 ..... dry

SPENCER COUNTY

Hupp—Arthur Ray, Daugherty & Stinson 4 ..... dry

PERRY COUNTY

Union—James Sweet, H. C. Darby & Co. 1 ..... dry
Clark—John Leclire, Bankable Oil 4 .. 30
Alvin Franchill, Anderson Creek Oil & Gas 9 25
Oil—Frank B. Keller, Obert Oil 1 .... dry

Wells completed 4
Production 55
Dry 2

HARRISON COUNTY

Harris—J. M. Link, Indiana Utilities Corp. 1 ..... gas

JAY COUNTY

Wayne—Bailey estate, N. E. Masters & Co. 2 and 3 ..... gas
George Cring, N. E. Masters & Co. 1 gas
R. Phelan, N. E. Masters & Co. 1 ... gas

Wells completed 4
Gas 4

KNOX COUNTY

Busseron—Elza Hall, O. A. Thayer & Co. 1 30
Elza Hall, O. A. Thayer & Co. 2 .... dry
Barton Yates, Lloyd & Thayer 1 .... gas
Harrison—Ida B. Doty, Perry Andrews & Co. 1 ..... bad
Bartlau, T. L. Andrews 1 ..... abd

Wells completed 3
Production 30
Dry 1
Gas 1
Abandoned 2

MARTIN COUNTY

Perry—John Larkins, Sproul & Co. 5 .. dry

VANDERBURG COUNTY

Center—J. M. Effinger, Drake, Moffett & Young 7 25
J. M. Effinger, Drake, Moffett & Young 8 50
John Effinger, Chas. C. Taliaferro, Jr. 9 20

Wells completed 3
Production 75

Lima Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	0	0	0	0	0	3	3
Hancock	0	0	0	0	0	1	1
Allen	0	0	0	0	0	2	2
Auglaize	0	0	0	0	0	2	2
Mercer	0	0	0	0	0	1	1
Darke	1	0	0	1	0	0	0
Sandusky	1	0	1	0	0	4	4
Lucas	0	0	0	0	0	1	1
Ottawa	0	0	0	0	0	1	1
Seneca	1	0	0	1	0	4	4
Wyandot	3	10	0	1	1	8	9
Williams	0	0	0	0	0	1	1
Hardin	0	0	0	0	0	1	1
Marion	0	0	0	0	0	1	1
Shelby	0	0	0	0	0	2	2
Total Jan.	6	10	1	3	1	32	33
Total Dec.	4	75	2	1	3	30	33
Difference	2	65	1	2	2	2	0

WELLS COMPLETED

WOOD COUNTY

Henry—F. Sommers, Chidester, Baldwin & Co. 5 ..... abd
Portage—Wm. Landis, A. T. Carpenter 1, 2, 3 ..... abd

Abandoned 4

ALLEN COUNTY

Jackson—P. S. Wingate, Ohio Oil 1 ... abd
Mary Stoodt, Ohio Oil 3 ..... abd
Bath—Hanson estate, Ohio Oil 3 ..... abd
Allen County Infirmary, Ohio Oil 25. abd
John L. Custer, Ohio Oil 5 ..... abd
J. T. Miller, Ohio Oil 4 ..... abd
Mason Ward & Fetter, Ohio Oil 2 .... abd
Elizabeth Gray, Ohio Oil 4 ..... abd

Abandoned 8

DARKE COUNTY

Mississinawa—H. W. Long, J. H. Hoffman 7 ..... gas

SANDUSKY COUNTY

Scott—J. H. Burnett, Homer Blessing & Co. 3, 4, 5 ..... abd
S. A. Schwind, James P. Evans & Co. 2, 3, 4, 5 ..... abd

Abandoned 7

OTTAWA COUNTY

Catawba—Ferdinand Riechman, R. M. Bell & Co. 2, 3, 4, 5 ..... abd
Allen—J. P. Shessler, R. M. Bell 1, 2, 3, 4, 5 ..... abd

Abandoned 9

SENECA COUNTY

Hopewell—G. M. Kimmett, S. H. Curry 1 ..... gas

WYANDOT COUNTY

Crane—Gotlieb Seiler, Keiner & Co. 3.. 5
Tymochtee—McLeod Brown, U. M. Gas 3 ..... gas
Crawford—Edward Keister, Wyandot Oil 7 5

Wells completed 3
Production 10
Gas 1

Illinois Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	0	0	0	0	0	1	1
Crawford	0	0	0	0	1	1	2
Marion	0	0	0	0	0	1	1
Boone	0	0	0	0	1	0	1
Jefferson	0	0	0	0	0	1	1
Clinton	0	0	0	0	0	1	1
Bond	0	0	0	0	0	2	2
Madison	0	0	0	0	0	1	1
Macoupin	0	0	0	0	0	1	1
Coles	1	0	1	0	0	0	0
Jasper	0	0	0	0	0	1	1
Total Jan.	1	0	1	0	2	10	12
Total Dec.	1	0	1	0	0	10	12
Difference	0	0	0	0	2	0	0

WELLS COMPLETED

COLES COUNTY

Hutton—J. Biggs, W. C. McBride 1 .. dry

WABASH COUNTY

Wabash—Adam Schaffer, Robinson Oil 1, 3 ..... abd
Hattie Robinson, Robinson Oil Co. 3, 4 abd
Wm. Schaffer, Robinson Oil 1 ..... abd
M. Schaffer, Robinson Oil 1 ..... abd
D. H. Price, J. S. Young, Jr. & Co. 1. abd
C. Keyser, B. F. Wireback & Co. 3... abd

Abandoned 8

ST. CLAIR COUNTY

Sugar Loaf—Wm. Anderline, Ohio Oil 2 abd

Central Ohio Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ashland	0	0	0	0	0	1	1
Medina	0	0	0	0	1	1	2
Lorain	2	0	1	1	1	5	6
Holmes	1	4	0	0	0	2	2
Richland	0	0	0	0	0	1	1
Wayne	0	0	0	0	0	1	1	2
Summitt	0	0	0	0	0	3	3
Fairfield	2	0	1	1	1	2	3
Knox	1	0	1	0	2	5	7
Coshocton	0	0	0	0	3	3	6
Huron	1	0	0	1	0	0	0
Licking	6	155	0	3	1	3	4
Muskingum	2	66	0	1	0	8	8
Athens	4	0	1	3	2	9	11
Tuscarawas	3	5	0	2	2	3	5
Stark	9	0	0	9	4	16	20
Belmont	5	0	1	4	0	8	8
Guernsey	4	23	0	2	1	5	6
Crawford	0	0	0	0	0	1	1
Gallia	0	0	0	0	0	3	3
Scioto	0	0	0	0	0	1	1
Pike	0	0	0	0	0	2	2
Carroll	1	0	1	0	0	3	3
Vinton	1	0	0	1	1	1	2
Lawrence	0	0	0	0	0	5	5
Total Jan.	42	253	6	28	20	92	112
Total Dec.	49	173	19	12	12	108	120
Difference	7	80	13	16	8	16	8

WELLS COMPLETED

LORAIN COUNTY

Eaton—Elmer Alexander, Ohio Fuel Gas 1-5,772 ..... gas
Avon—John Burkhardt, Edison & Co. 1 dry

Wells completed 2
Dry 1
Gas 1

HOLMES COUNTY

Hardy—Phillip Collier, Preston Oil 3-1,529 4

FAIRFIELD COUNTY

Berne—Jess Shull, City Natural Gas Works 2 ..... gas
Pleasants—Jas. B. Feeman, City Natural Gas Works 2 ..... dry
Monroe—Fred Cochran, Lackett & Co. 1 dry

Wells completed 3
Dry 2
Gas 1

HURON COUNTY

Litchfield—W. O. Hartman, J. E. Ringler 1 ..... gas

LICKING COUNTY

Mary Ann—Russell Jones, Ohio Fuel Gas 1-,5776 ..... gas
Homer Jones, Armbruster & Strickler 2 ..... gas
Fallsburg—Chas. Babcock, Upham Oil 2 10
Rachael Fleece, Norpell Oil 3 88
Melvin McKee, McClay Bros. 1 57
Madison—Jennie Darnes, Wehrle Gas Co. 7 ..... gas

Wells completed 6
Production 155
Gas 3

MUSKINGUM COUNTY

Jackson—Emmet Sheppard, Pure Oil 1 66
Brush Creek—I. C. Swingle, Fritz Oil & Gas 1 ..... gas

Wells completed 2
Production 66
Gas 1

ATHENS COUNTY

Berne—A. S. Vernon, C. W. Nuzum 1 .. dry
Lodi—Townsend, Gus Townsend & Co. 1 gas
Cora Evans, Ohio Fuel Gas 1,5770... gas
Lee—Alvin D. Cline, I. C. Robinson 4.. gas

Wells completed 4
Gas 3
Dry 1

TUSCARAWAS COUNTY

Washington—Martha Carroll, Gordon Oil Co. 3 5
Fairfield—W. C. Notz, Frey & Co. 1 ... gas
Perry—Wm. Golden, D. W. Hunt & Co. 1 ..... gas

Wells completed 3
Production 5
Gas 2

STARK COUNTY

Jackson—H. R. Konen, East Ohio Gas 1 gas
Lee Miday, Ohio Fuel Gas 2-5,762.... gas
S. E. Carlson, Ohio Fuel Gas 1-5,766.. gas
Lawrence—Minnie Simmons, Wittmer O. & G. 1 ..... gas
Plain—Marquardt, Cunningham Nat. Gas 3 ..... gas
Levi A. Stoner, Cunningham Nat. Gas 2 ..... gas
F. E. Dooms, East Ohio Gas 1 ..... gas
R. D. Staudt, East Ohio Gas 1 ..... gas
E. R. Methie, Brendel Prod. 1 ..... gas

Wells completed 9
Gas 9

BELMONT COUNTY

Somerset—E. J. Pfeffer, Hobson & Patton 14 ..... gas
Rosalie Johnson, Robt. Lewis & Co. 6 gas
Union—J. H. Lynn, T. C. Hall & Co. 2,5774 ..... dry
J. C. Walker, R. W. Dunne & Co. 2.. gas
Richland—Magee, Robt. Morgan & Co. 1 gas

Wells completed 5
Gas 4
Dry 1

GUERNSEY COUNTY

Wheeling—Quillan, E. C. Quillan 2 13
J. O. Alloway, Preston Oil 6 10
Adams—E. B. Simms, C. C. Wharton 1 gas
Willis—Fred Foraker, Ferguson & Co. 1 gas

Wells completed 4
Production 23
Gas 2

CARROLL COUNTY

Brown—Whittaker, Brendel Prod. 1 ... dry

VINTON COUNTY

Brown—L. Eggleston, Kachelmacher estate 2 ..... gas

Kentucky Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Ohio	0	0	0	0	0	17	17
Daviess	0	0	0	0	0	16	16
Hancock	0	0	0	0	0	6	6
Muhlenberg	0	0	0	0	0	3	3
McLean	0	0	0	0	0	8	8
Bath	0	0	0	0	0	1	1
Lee	0	0	0	0	0	1	1
Knox	0	0	0	0	0	1	1
Edmonson	0	0	0	0	0	1	1
Todd	0	0	0	0	0	1	1
Grayson	0	0	0	0	1	1	2
Warren	0	0	0	0	0	2	2
Allen	3	2	2	0	1	0	1
Ttl. Jan.	3	2	2	0	2	58	60
Ttl. Dec.	18	477	8	0	1	60	61
Difference	15	475	6	0	1	2	1

WELLS COMPLETED

ALLEN COUNTY

Scottsville—W. L. Motley No. 2, Jewell Wilson 4 2
Berry hrs., H. N. Coughill 4 ..... dry
E. H. Wools, H. N. Coughill 55 .... dry

Wells completed 3
Production 2
Dry 2

Eastern Fields

SOUTHEAST OHIO

WELLS COMPLETED

ATHENS COUNTY

Townsend, A. D. Townsend et al 1 ... gas

COSHOCTON COUNTY

Norris, Leonard O. & G. Co. 4 50

GUERNSEY COUNTY

Quillan, E. C. Quillan et al 1 10

HOCKING COUNTY

Sunday Creek Coal Co., Preston Oil Co. 1,532 120

JEFFERSON COUNTY

Co-operative Transit Co., Hill Oil Co. 1.. 10

LICKING COUNTY

Kreager, Wehrle Co. 2 ..... dry
Freese, Park Natl. Bank of Newark, Ohio et al 1 88
McKee, McClay Bros. 1 57
Martin, McClay Bros. 1 ..... dry

MEDINA COUNTY

Miller, E. R. Edson & Son Co. 30 10
Miller, E. R. Edson & Son Co. 40 5
Essig, Oko Oil & Gas Co. 58 5
Erris, Oko Oil & Gas Co. 59 10
Weaver, D. A. Lake 12..... 10

MONROE COUNTY

Bowers, Blair Bros. et al 1 3

TUSCARAWAS COUNTY

Carroll, Gordon Oil Co. No. 2 Acct. 3. 7

WASHINGTON COUNTY

McKee, Hall & Henning 2 ..... gas
Moore, Harry Binegar 3 ..... gas
Greenwood, Swingle Bros. 4 ..... dry
McCullough Heirs, Peoples Banking & Trust 8 ..... dry
Holdren, Beever & Painter 1 ..... dry
Noland, Zero Oil Co. 6 ..... dry

PERRY COUNTY

Emmett, Hopewell Oil & Gas Co. 3 ... gas

WEST VIRGINIA

WELLS COMPLETED

BOONE COUNTY

Federal Coal Co., Pure Oil Co. 60 .... gas
Federal Coal Co., Pure Oil Co. 62 ..... gas
Broun-Cochran, Columbia Carbon 6 ... gas
Prichard, Pure Oil Co. 1 ..... dry

CABELL COUNTY

Wolfe & Oppenheim, H. E. Baker Gas Co. ..... gas
Darnell et al, R. H. Adkins et al 2 .... gas
Adkins, Empire State Gas Co. 1 ..... gas
Vickers, C. C. Wolfe et al 1 ..... gas

CALHOUN COUNTY

Hays, F. F. McIntosh 3 ..... gas
Stump Heirs, L. P. Bickel 14 10
Hughes, M. F. Crawley 1 3
Ferguson, Jess Mason et al 1 ..... gas
Snyder, Fisher & Smith 1 ..... dry

DODDRIDGE COUNTY

Walton, Riley Piggott et al 1 ..... gas

GILMER COUNTY

Baptist Home Missionary, Chartiers Oil Co. 1 ..... dry

LOGAN COUNTY

Merrill Coal Co., Cumberland Pet. Co. 9 ..... gas

MONONGALIA COUNTY

Yost, Mfrs. Light & Heat Co. 1 ..... dry
Straight, State Line Oil & Gas Co. 1 .. gas

PLEASANTS COUNTY

Watson, Locke-Simonton Co. 1 5
Bier Heirs, Ed Heilman 1 2

PUTNAM COUNTY

Findley, J. V. Reishman 1 ..... gas

RITCHIE COUNTY

P. McGinnis, J. Graham et al 2 1
Fox, C. F. Vincent et al 4 10
Kibble, T. J. Davis et al 1 ..... gas
Van Martin, Lucas & Mahaney 1 10
Frederick, Smith & Hendershot 3 15
Bollinger, S. M. Prunty et al 1 ..... gas
Vincent Heirs, R. E. Bills et al 1 5
Welch, John Deem 1 ..... dry
Fredericks, Smith & Hendershot 4 30
S. McGinnis, R. B. Roberts et al 2 10

ROANE COUNTY

Knopp, Reedy Oil & Gas Corp. 1 5

WIRT COUNTY

Richter, R. C. Wagner et al 1 ..... gas

WOOD COUNTY

McAllister, Warren Reed 1 ..... dry

Complete Knowledge of Formation Characteristics May Be Secured by Study of Cable Tool Cores

By WALLACE A. SAWDON
Petroleum Engineer, Los Angeles, Calif.

While the water drive operations in the Bradford Field in Pennsylvania are, perhaps, somewhat specific in their application, they demonstrate very forcibly the necessity of coring sands when external forces are to be used in driving oil out of the formations. Reports on these operations and the results that were made possible by a specific knowledge of the sands have been most ably presented to the industry by Paul D. Torrey, a consulting petroleum engineer of Bradford, Pa., in a paper published in The Oil and Gas Journal, August 15, 1929, page 38, and read before the American Institute of Mining Engineers.

In treating of water flooding in the Bradford Field, Mr. Torrey says: "Some sands are particularly adapted to water

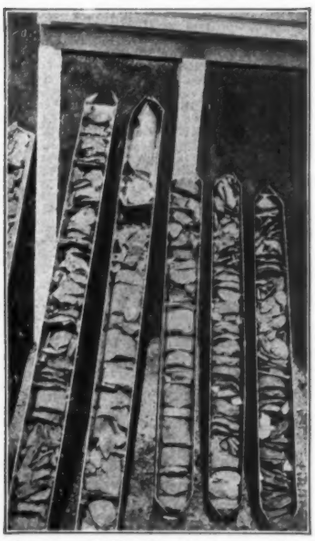


Fig. 1.—Cable tool cores taken from very hard formations

flooding; others will return only moderately satisfactory results and certain sands will probably never be successfully flooded. It has been rather easy to establish, by comparison, the criteria that determine the suitability of a sand for flooding purposes. In consequence, much money may be saved by determining in advance by preliminary coring how suitable a sand is for water flooding before actual field experiments are attempted."

Confining Fluid Flow

In the Bradford and Allegheny Fields the upper part of the sand is a gas pay. Mr. Torrey points out that the position of this is usually rather definite, but in some parts it is not recognized. This gas pay, however, must be packed or cemented off to insure the effective movement of water in the flooded areas, and its location can often be determined only by coring. The accurate location by cores has, he says, been the means of cementing this gas pay off to increase the efficiency of flooding action by forcing all the water through the oil pay.

Core analyses have also been of considerable importance in shooting. In many cases hardly one-third of the sand body can be flooded and to shoot the entire sand would be not only a waste but would often cause prolonged clean-out jobs. He has found it a good policy to vary the intensity of the shot to conform to the porosity of the sand, concentrating on sand of low porosity which offers greater resistance to fluid movement.

A delayed system of drilling is being followed in the water flooding operations. Coring is essential in planning such a system since "it is most desirable to understand as fully as possible the condition existing in the sandy body in order to know in advance what pressures will be required and to estimate how long a delay is necessary. Such information can be obtained only from core studies."

"The cable tool core barrel possesses an advantage in that the core is not subject to high water pressure and samples of sand for saturation tests can be obtained easily in about 10 minutes after they have been cut from the sand body. The actual coring of the sand can be done ordinarily as rapidly as drilling with the customary tools although, of course, more time is required when the tools are out of the hole to change bits, etc. The sands of both the Bradford and Allegheny Fields are almost uniformly thin-bedded, so most cable tool cores are broken into small bisquits, which represent the thicknesses of the actual beds of sand.

"The comparatively low cost and simplicity of the cable tool core barrel has appealed to many oil producers, but its greatest advantage lies in the flexibility of its operation and the fact that samples for saturation tests can be obtained that more nearly approach actual conditions in the reservoir than those obtainable by any other method."

The Baker Cable Tool Core Barrel

The cable tool core barrel mentioned in the above is of the two-part type which collects the sample of formation in an inner tube section. This inner barrel has no motion except to follow down over the undisturbed cylinder of formation as the outer barrel cuts around it. The form in which the core is recovered will vary with the formation since the jar caused by drilling hard formations will naturally tend to break the core into sections as it is being taken. Extremely hard formations will usually be recovered in bisquits of varying length.

Sections of very hard formations are recovered in the form shown in Figure 1 which is the photograph of a core taken of a formation that was too hard for an ordinary rotary core barrel to take. There seems, therefore, to be no limit to the recovery of cores by this cable tool barrel as far as hardness is concerned. The majority of cores from medium to fairly hard formations are recovered in the form shown in Figure 2 which is a good example of the performance of the Baker standard core barrel.

While the core taken with the cable tool core barrel may be fractured into sections during its recovery, its vertical continuity during the run is in no way impaired. The core as removed from the inner barrel gives a sample of the formation as it actually lies in the ground since there is no contamination of the sample after the drill begins to core.

Speed and Recovery

Drilling is about as rapid while coring as when being done with standard tools. This is borne out by reports received from different sections of the country and under varying conditions. Coring done in holes full of water when the regular drilling bit is retarded in action is probably more rapid than straight drilling but comparative results indicate that the character of the formations and the experience of the driller have their natural influence on speed.

Core recovery just as naturally is influenced by the personal element and hole conditions. In a number of wells in Colorado that were cored just after this core barrel was introduced to the industry, 49 runs were made with an average recovery of 61 per cent. In length, the individual cores ran as high as 56 inches with 2 and 3-foot lengths being most common.

Fig. 2.—Cable tool cores from a soft formation

Fig. 3.—Cable tool core barrel

Construction

There are a couple of interesting features in this Baker type of cable tool core barrel (Figure 3). No detailed description of the tool need be given here, however, since the manufacturer will be glad to furnish such information to those interested. The core, as mentioned above, is taken by an inner barrel. This is provided with a sharp bevel-edged trimmer shoe faced with hard metal. As the outer, or drill, barrel cuts around the inner tube, the core tube itself will then cut off any small fragments left and follow down over an undisturbed cylindrical piece of the formation. A trap ring above the trimmer shoe keeps the core from being lost during withdrawal.

An important feature is a ball check valve that permits water that is trapped in the core tube to escape as the tube fills with the core. This prevents any fluid under pressure from acting on the core.

The outer drill barrel is made with a clearance at the cutting edge that allows it to drop freely in the hole. The cutting teeth are spaced irregularly to prevent key-seating and are faced with hard metal.

Operation

The cable tool core barrel is placed in the string in the same position as the standard bit. Before running it, the hole should be bailed as free as possible of cavings and precautions taken to make sure that any metal is removed. Enough fluid should be in the well to cover the core barrel on its upstroke.

During coring operations, the inner barrel, or core tube, must not be raised off bottom at any time if a satisfactory core is to be recovered. The reason for this is evident. The tool should be operated with a slower motion than is usually employed in straight drilling; and the wristpin should be placed in the second hole to insure the inner core tube from being raised off the bottom of the hole.

The opening of a valve in the outer barrel on the upstroke permits water to enter the tool between the outer and inner barrels; but the closing of the ball valve in the inner barrel on the downstroke prevents any of the water from getting into the core tube. The action of the downstroke, which closes both valves, produces a hydraulic effect. The water passes between the outer and inner barrel with such force that it keeps the point of the shoe free from cuttings and, in all probability, makes it possible to drill certain formations faster than with the ordinary standard bit.

It is best to let the core barrel hit the formation with a solid blow that will keep the inner core tube on bottom and not make it move around. If tools are allowed to snap (or reach the bottom of the hole) there is a tendency to break the cores far more than is necessary. The screw should be let out regularly so that the tools will strike with the same force throughout the entire coring operation.

The fact that any experienced cable tool driller can operate the Baker cable tool core barrel and secure good results is greatly in its favor. A complete cable tool coring outfit with parts and accessory equipment need not cost more than $1,000. The cost of coring and drilling a full gauge hole where regularly used is surprisingly low on a footage basis and considering the vast sums of money spent in exploration and development work the expenditure for good coring equipment should recommend itself to the operator who wants facts every foot of the way.

Recognized

Throughout the Oil Fields of the world the many technical products produced from the engineering experience of The Sullivan Co. are recognized as "Life Preservers" for the Oil Fields. They include:

SLUSH-MIX. Mud heavier. Greases bit, fills caves and weak spots in wall. Controls gas. Repels friction and corrosion.

GELITE. The guaranteed, low cost mud gel. Rotary mud compound.

MUD-FLUX. Mud thinner. Cuts down viscosity.

FISSURSEAL. For lost circulation. Paving shale, etc.

KLEEN-A-WELL. Cleans tubing and rods. Increases production.

KONSET. Buy-word of veteran oil men—liquid cement accelerator, hardener and waterproofing, okeyed by 3 Governments.

CMENTO. For permanent or temporary cementing. Waterproofs. Facilitates casing pulling.

OIL WELL REVIVER. Non-explosive, non-inflammable. Safely, economically removes paraffin.

KLEEN-OIL. Repeatedly reclaims cut oil.

DEFLECT-O-LITE ALUMINUM PAINT. Protects all metal surfaces from weather and corrosion.

SOLRITE. For boiler feed water. Makes hard water soft. Prevents corrosion, scaling, pitting or foaming.

BLACK JOE. A superior paint for all equipment. Boilers, smokestacks, etc.

SULCO LIFE PRESERVERS FOR THE OIL FIELDS PRODUCTS

There's a Sulco Life Preserver for every Oil Field need.

The SULLIVAN Co.
Memphis, Tenn.
Cable Address: Sulco

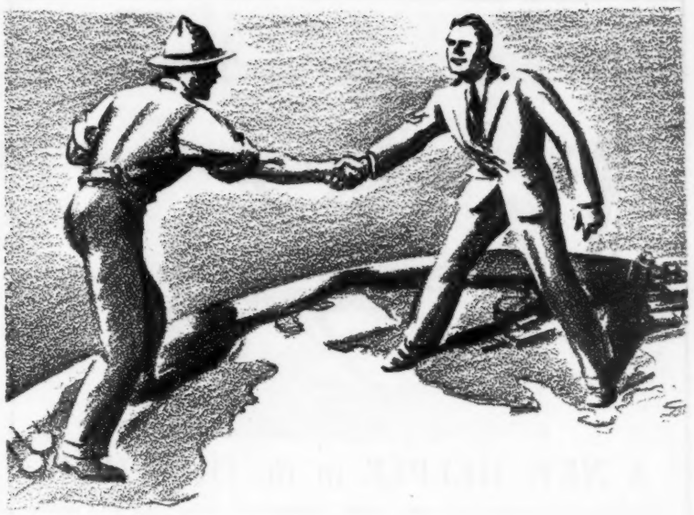
MW **PRODUCTS for pumping wells**
The KEY to LOWER LIFTING COSTS
CORRECTLY DESIGNED · · ECONOMICALLY PRODUCED
REASONABLY PRICED

NOW is the time to increase SMALL WELL production

with the Junior Insert Pump—ask your Supply Store for full particulars.

do it with JUNIOR INSERT PUMPS

BRADFORD MOTOR WORKS INC.
OIL WELL SUPPLIES
BRADFORD, PA. TULSA, OKLA.
EXPORT OFFICE—30 CHURCH ST.—NEW YORK CITY



Maybe he met you first in the Argentine . . .

WHEN you talk to Mason-Neilan Engineers, you don't have to make signs or draw pictures. They speak *your* language. They know the Oil Industry.

These men have had valuable oil backgrounds. From Calgary to Buenos Aires, from the Atlantic to the Pacific, they are at home in refineries and gasoline plants. Know the processes . . . appreciate the limitations.

One Mason-Neilan sales engineer worked several years in Oklahoma gasoline plants . . . later spent two years building and operating plants in South America . . . . graduated to an important position with a leading plant construction company. Another served as operating engineer in a string of experimental refineries.

This is one of the reasons why hundreds of Oil Industry engineers rely on Mason-Neilan whenever confronted with a problem concerning the control of pressures, temperatures or rates-of-flow.

Call in your nearest Mason-Neilan Engineer . . . he can help you get more out of *your* plant thru improved control.

NRA

MASON-NEILAN
REGULATOR COMPANY

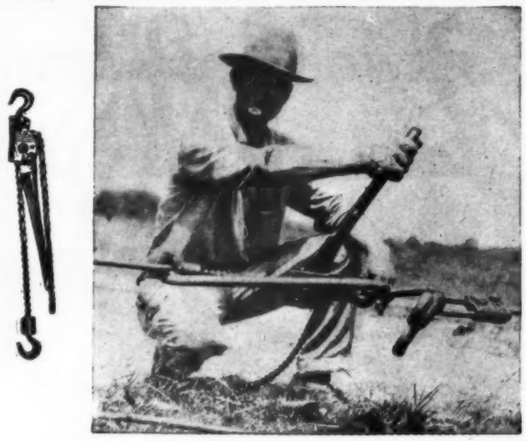
[*Consolidation of Mason Regulator Co. of Boston and Neilan Co., Ltd., of Los Angeles.*]

1190 Adams Street, Boston, Mass.

BALTIMORE, Whitaker Bldg.	Morton Mel, Dukehart & Co.
CHICAGO, 1525 E. 53rd. St.	Gordon Thomason, Mgr.
HOUSTON, 1400 Conti St.	Maintenance Engineering Corp.
LOS ANGELES, 2446 Enterprise St.	Tunnell & Co.
MONTREAL, CANADA, 620 Catheart St.	Maurice Peiler, Mgr.
NEW YORK, 19 Rector St.	Rudolph B. Werey, Mgr.
PHILADELPHIA, 930 North Front St.	Baeuerle & Morris, Inc.
PITTSBURGH, Clark Bldg.	Bruce Irwin, Mgr.
ST. LOUIS, 2726 Locust Blvd.	O'Brien Equipment Co.
SYRACUSE, N. Y., 640 Gurney Bldg.	O'Brien Steam Specialty Co.
TULSA, 409 East Archer St.	Moorlane Co.

YOU CAN BE SURE OF MASON-NEILAN PRODUCTS

870



A NEW HELPER in the OIL FIELD

This hoist is a rachet type, using special Diamond roller chain and built with swivel hooks. The lever can be changed from one side to the other making it possible to use the hoist either end up, laying down, or in any position, for lifting or pulling.

The Oil Producers have found the Coffing Hoist to be a superior tool for their work on account of its light weight and compactness, and it is easy to operate.

They use them for picking up rod lines to oil wells, skidding engines, boilers and any cumbersome equipment into place, loading trucks, erecting rigs, or wherever a lift or pull is needed.

Capacities from ¼-ton to 6-ton; weights from 14 lbs. to 65 lbs.

These hoists can be obtained from our representatives:

The Drillers Supply Co., Wichita, Kansas—Norvell-Wilder Supply Co., Beaumont, Texas—Standard Supply & Hardware Co., New Orleans, La.—Young & Vann Supply Co., Birmingham, Ala.—Pacific Wire Rope Co., Los Angeles, Calif.—Pittsburgh Gage & Supply Co., Pittsburgh, Pa.—Trimble & Lutz Supply Co., Wheeling, W. Va.—The Bittenbender Co., Scranton, Pa.—Iverson Tool Co., Tulsa, Okla.

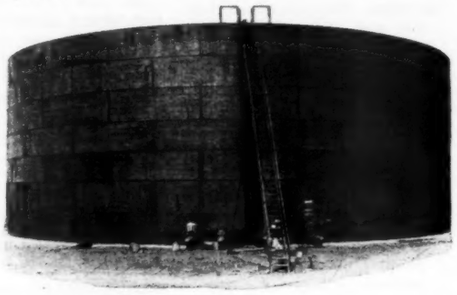
Manufactured by

COFFING HOIST COMPANY
DANVILLE, ILLINOIS.

GRAVER

Built and Erected Storage and Special Steel Fabrication

The engineering department of GRAVER offers you expert service in modern economies of design and erection. We are equipped to build and erect field storage, refinery, bulk plant, service station and truck tank equipment of steel plate construction with necessary fittings, either to your specifications or designed to your needs. GRAVER manufacturing and fabricating facilities are unexcelled, yet production costs are low. GRAVER experience and responsibility are long standing. GRAVER field erection is recognized for its good workmanship. Let GRAVER figure on your work.



GRAVER TANK & MFG. CORP.

General Sales Office: 332 South Michigan Avenue, Chicago.
General Offices and Factory: East Chicago, Indiana.
Representatives in Principal Cities.
Manufacturers and Erectors—Special Steel Plate Construction—Water Conditioning Equipment.

NEARLY 75 YEARS IN STEEL FABRICATION.

..for high pressure oil and gas lines

Fulton High Pressure Regulator

CF

Two thousand pounds pressure to the square inch can be controlled, and gas can be passed on to the main or the distributing line at reduced pressure to suit requirements, by the use of the proper C-F Regulator. Standard Regulators are designed for pressures up to 600 pounds. For higher pressures, designs are adapted according to specifications of the user.

The Chaplin-Fulton Manufacturing Co.
28-40 Penn Ave., Pittsburgh, Pa.

REPRESENTATIVES:

WESTCOTT & GREIS, Inc.
Sales and Service
Dallas—Tulsa

C. H. COLLINS
628 Dwight Bldg.
Kansas City, Mo.

HIMELBLAU, BYFIELD & CO.
228 N. LaSalle St.
Chicago, Ill.

Or any Jobber

CONSTANT

research in field and laboratory, the use of superior crude oils, and the most modern refining equipment are the three stones in the foundation upon which Humble quality has been built.

HUMBLE

OIL AND REFINING COMPANY

HOUSTON, TEXAS

Producers, Transporters, Refiners and Marketers of Petroleum and Its Products.

North Louisiana Wildcats Prove Disappointing; Two Dry Holes Reported From Mississippi

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Feb. 19.—The wildcat completions in this division during the week were all failures but locations on a number of blocks indicates continued activity, particularly in the North Louisiana district on the Sabine Uplift in the northwestern part of the State. Another setback was experienced in the Conroe Field by several tests, the new sand recently uncovered below the Annona chalk, which had previously produced in this area, not coming up to expectations, considerable salt water showing up with a small amount of oil. The wells will be plugged back to the chalk horizon where the use of acid has been successful in making small pumpers.

NORTH LOUISIANA

C. R. Reid, trustee's No. 1 Dotys, Section 7-16-11, north of the Elm Grove Field, Bossier Parish, is still running wild with only 100 feet of 10-inch surface casing in the hole. The well is blowing an estimated 1,000,000 feet of gas and considerable salt water from a total depth of 3,020 feet and is cratering badly. The pay is coming from a depth below the gas and oil bearing horizon of the field to the south, and has been looked upon during the past two weeks as another important discovery of deeper pay in the shallow producing area. Another wildcat in the same parish southwest of the old Bellevue Field, Jensen, Mixon and Gutzler's No. 1 Ledbetter, Section 6-18-11, failed to get a show on test in the Blossom sand at 2,115 feet and is coring sandy shale at 2,130 feet.

Gulf Refining Co.'s No. 1 Luther Ford, Section 8-22-13, about 7 miles west of Plain Dealing, in the northwestern part of Bossier Parish, is shut down at 3,730 feet. This is a core test on a geophysical block of about 10,000 acres and it is not known at this writing whether another test will be drilled on the block or the present hole drilled deeper. One new operation was reported for Bossier Parish, Howard and Baird have derrick pattern on location for their No. 1 Sam Gold in Section 36-20-13.

In the Sugar Creek deep gas area, Claiborne Parish, United Gas Public Service Co.'s No. 2 Tony Durrett, Section 8-19-5, was dry on drill stem test at 4,494 feet and is coring at 4,539 feet. Gas in this field is encountered around the 4,350-foot level from Oolitic lime in the upper Trinity. Haynesville Partnership's No. 1 Anna Taylor, Section 11-23-8, just north of shallow production in the Haynesville Field, is rigging up to pump after the well failed to flow from swabbing through 2-inch tubing. In the Rodessa Field, Caddo Parish, R. W. Norton's No. 1-B French, Section 34-23-16, is drilling in lime and shale at 6,440 feet. This test is being drilled in search of oil in an area that produces gas of high gasoline content from the 5,600-foot level.

Wildcat Operations

Other wildcats in the North Louisiana area follow: Caldwell Parish, G. D. Davis' No. 1 Louisiana Central Lumber Co., Section 14-11-3e, coring at 1,410 feet; Terrell and Price's No. 1 Louisiana Central Lumber Co., Section 18-11-3e, has drill stem stuck at 2,080 feet; DeSoto Parish, Bailey Gaunce's No. 1 Jenkins, Section 35-13-12, has hole clean and is setting 3-inch casing with packer with the total depth at 3,577 feet. This well, in the old Naborton Field, tested 13,000,000 feet of gas recently, but 5-inch casing collapsed at 1,860 feet during the gauge. The gas is coming from a horizon deeper than has heretofore produced in that area. Gaskill and others' No. 1 Jim Guy, Section 3-11-13, after setting 7-inch casing at 2,759 feet, is arranging to test from a total depth of 2,773 feet. A deep test near the town of Longstreet, DeSoto Parish, has resumed operations after being shut down for several months. E. T. Oakes' No. 1 Bryant, Section 30-13-15, is drilling in lime and shale at 4,806 feet. This test is about 8 miles north and east of a wildcat gasser which blew in about two years ago in the northeastern part of Shelby County, East Texas, between the towns of Logansport and Joaquin. In Red River Parish, H. M. Jones' No. 1 Sample, Section 10-14-11, was dry on drill stem test at 2,605 feet and stands temporarily abandoned at 2,622 feet. R. L. Gay, trustee's No. 2 Long Bell Lumber Co., Section 10-8-13, a deep test northwest on the Zwolle Field, Sabine Parish, has cemented back to 7,110 feet with the old total depth at 7,154 feet. This test has been inactive for the past year. Standard Oil Co. of Louisiana has completed its No. 36 Lowenberg, Section 24-21-8, in the Nacatoch sand in the old Homer Field, Claiborne Parish. The well, drilled to a total depth of 1,355 feet, will be used as a key well to repressure 10 surrounding wells on the same lease. If successful, other wells will probably be drilled in this prolific field until the total area is repressured. It will be recalled that Gulf Refining Co. and Ohio Oil Co. used the same method in the Haynesville Field several years ago with decided success.

Completions

The North Louisiana district reported seven completions during the week, five producers and two dry holes. The old Pine Island area of Caddo Parish came back into the new producing column with two successful completions, although both were small pumpers. C. G. Gibbons and others' No. 1 Craig, Section 15-21-16, is a 50-bbl. pumper from 2,196 feet, and Shreveport Oil Corp.'s No. 10 Hicks, Section 32-21-15, is pumping 10 bbls. daily from 1,655 feet. The Zwolle Field reported two wells and the Converse Field one. In the former area, George L. Pace's No. 3 Greer, Section 32-8-11, is flowing an estimated 300 bbls. daily from 2,400 feet, and in the same section, Ben F. Smith's No. 1 Williams, is pumping 50 bbls. daily from 2,268 feet. In the Converse area, George L. Pace's No. 1 C. W. Quinn, Section 10-9-13, is pumping 60 bbls. with a small amount of salt water from 2,033 feet. The pay is coming from 6 feet of sand under the Annona chalk. A shallow test in Caddo Parish was abandoned as dry after being shut down for several months. McEnery-Bird, trustee's No. 1 Lawhon and Bogan, Section 12-14-16, was abandoned at 1,090 feet. A wildcat in the southern part of Natchitoches Parish that has been watched with interest has barren results. George R. Stevens and others' No. 1 Clarke-Boyce Lumber Co., Section 10-5n-6w, was dry and abandoned in sandy shale at 3,385 feet. No test was made as the well failed to show a paying sand anywhere along the log.

MISSISSIPPI

Two completions, both dry holes, were reported from Mississippi. South of gas production in Rankin County, Cleve Love and others' No. 1 Thomas, Section 10-4-1e, was dry and abandoned at 5,465 feet in sandy lime. In Lamar County, the Lamar Oil Co.'s No. 1 Scott, Section 18-2n-14, was abandoned as dry in sandy shale at 3,010 feet. Two operations were staked, both in Rankin County. Henslee and Tanner have derrick up and rig on location for their No. 1 Sloan, Section 7-5-26, and Benedum & Trees are rigging up on their No. 1 Oscher in Section 35-3n-1e. In the same section, these operators have set 12½-inch casing in their No. 1 Southern Development Corp. at 902 feet.

In Greene County, United Public Service Co.'s No. 1 Davis, Section 30-1n-5w, is coring at 2,650 feet after setting 10-inch casing at 1,240 feet. Orbit Drilling Co.'s No. 1 R. L. Parker, Section 14-14-1e, Warren County, cored a likely looking sand at 3,161 feet and is arranging to set 7-inch casing for a test. Wayne Oil Co.'s No. 1 Gavin School Land, Section 16-9n-7w, Wayne County, is temporarily shut down for fuel at 4,502 feet in chalk.

ARKANSAS

The Miller County Field furnished one of the two producers in this district and the Urbana Field in Union County the other. In the former area, Magnolia Petroleum Co.'s No. 2 Olivet, Section 4-16-26, is flowing 35 bbls. of pipe line oil through 2½-inch tubing from 2,930 feet. Marine Oil Co.'s No. 2-D Thompson, Section 3-18-13, Urbana district, is a 50-bbl. pumper from 3,566 feet. Three other wells in the Miller County Field are completed, but are experiencing pumping trouble. Texarkana Oil Corp.'s No. 2 E. L. Beck, Section 33-15-26, pumped at the rate of 300 bbls. daily for seven hours until rods parted and the rig is shut down waiting on new rods. Gleason and Wendell's No. 1 Patterson, Section 5-19-28, a wildcat in the southern part of Miller County, has resumed operations and is washing to bottom at 2,850 feet. A closely watched test in that area, Fitzwater and others' No. 1 Norsen, Section 20-15-27, is coring at 3,031 feet. This test is several miles west of production.

Daily Average Runs

Daily average runs last week were:

NORTH LOUISIANA

Caddo, light	4,645
Caddo, heavy	1,410
Converse	1,115
Cotton Valley	560
DeSoto	1,495
Elm Grove	330
Haynesville	3,730
Holly	190
Homer	2,630
Pleasant Hill	230
Sarepta	860
Urania	2,975
Zwolle	8,075
Total North Louisiana	28,245
Total previous week	27,640
Increase	605

ARKANSAS

Champagnolle	1,240
El Dorado	2,455
Lisbon	410
Miller	915
Nevada	535
Smackover, light	2,510
Smackover, heavy	20,500
Stephens	940
Urbana	2,380
Total Arkansas	31,585
Total previous week	32,230
Decrease	645
Total both states	59,830
Total previous week	59,870
Decrease	40

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

North Louisiana

BOSSIER PARISH

Company, well, farm name, section and block— Remarks:

C. E. Reid, tr.'s No. 1 Dotys, 730 ft. S, 618 ft. W, NE SE Sec. 7-16-11 ..... Blowing est. 1,000,000 ft. gas and S.W.; 3,020 ft.

CADDO PARISH

W. O. Bliss' No. 1 McDade, 330 ft. N and E, SW cor. NW NW Sec. 2-20-15 ..... S.D. for fuel 1,450 ft.

CALDWELL PARISH

Terrell & Price's No. 1 La. Central Lbr. Co., 300 ft. N, 200 ft. W, SE cor. NW NE Sec. 18-11-3e ..... D.S. stuck 2,080 ft.

CATAHOULA PARISH

T. R. Hincey's No. 1 Millsaps, Sec. 32-9-4e ..... Derrick.

CLAIBORNE PARISH

Haynesville Partnership's No. 1 Anna Taylor, 330 ft. N and E, SW cor. SE SW Sec. 11-23-8 ..... W.O.S.R. 4,595 ft.

DE SOTO PARISH

Coker Oil Corp.'s No. 1 Huson, 200 ft. S, 500 ft. W, NE cor. NW Sec. 8-12-14 ..... S.D.; W.O. 3,103 ft.

Geo. M. LeGrand's No. 1 Faria, 330 ft. S and W, NE cor. SE Sec. 19-11-15 ..... S.D. 2,388 ft.

MOREHOUSE PARISH

Zeiger & Bacon's No. 1 Crossett, 400 ft. N, 300 ft. W, SE cor. Sec. 41-23-6e ..... Drlg. 1,180 ft.

NATCHITOCHES PARISH

Geo. R. Stevens' No. 1 Clarke-Boyce Lbr. Co., 330 ft. N and W, SE cor. Sec. 10-5n-6w ..... Dry and abd. 3,385 ft.

CONVERSE DISTRICT

Arrock Oil Co.'s No 1 Hewitt, 330 ft N and E, SW cor. NE SE Sec. 20-9-13 ..... S.D.; W.O. 1,606 ft.

J. F. Anderson's No 1 Burkett, 135 ft. N, 855 ft. E. SW cor. NW Sec. 10-9-13 ..... W.O.S.R. 1,921 ft.

Nick Barbare's No. 1 Bolton, Sec. 9-9-13 ..... Drlg. plug 1,705 ft.

Nick Barbare's No. 1 Burkett, 900 ft. N 900 ft. E. SW cor. NW Sec. 10-9-13 ..... W.O.S.R. 2,018 ft.

Clyde Bell's No. 1 Burkett, 280 ft. N, 165 ft. E, SW cor. Sec. 10-9-13 ..... Set 6-in. 1,749 ft.

J. W. Bettis et al's No. 1 Frost Ldr. Ind., 330 ft. S and W, NE cor. SW Sec. 15-9-13 ..... Rigging up.

A. G. Craig's No 1 Belton, 330 ft. N and E, SW cor. NW NW Sec. 33-9-13 ..... S.D. 1,150 ft.

Florence Oil Co.'s No. 2 Crawford, Sec. 20-9-13 ..... Junked hole 1,865 ft.; skidding over.

Alfred Glassell's No. 1 Tatum, 330 ft. N and W, SE cor. NE NW Sec. 9-9-13 ..... S.D.; W.O. 1,942 ft.

(Continued on Page 94)

Big Wells in Rice County and Good Wells in Kansas Central West Counties; Dry Wildcat

By JAMES McINTYRE

Crude oil production in Kansas was increased to 115,000 bbls. per day in the past week, the first time in weeks that the State has produced its permitted quota of crude. Central western pools that have been held back week after week were permitted to increase their output.

Big wells in Rice County and a number of good wells in McPherson and Harvey Counties were reported in the past week. Following the report last week of a number of important tests that proved dry, was the finish of a wildcat in Sedgwick County, which was a failure at 4,107 feet.

Production by Pools

Estimated daily average production of important pools in Kansas for the week ending February 17 and for the preceding week was as follows:

	Feb. 17	Feb. 10
Hollow	9,175	8,360
Ritz-Canton	13,125	12,730
Voshell	7,605	6,690
Sedgwick County	6,840	6,235
Nikkell	3,995	3,525
Ellsworth County	4,132	2,421
Barton County	841	578
Rice County	7,954	6,219
Reno County	3,082	2,365
Ellis County	322	378
Kingman County	54	.....
Stafford County	734	404
Russell County	5,255	5,350
Greenwood County	12,400	12,500
Butler County	17,800	17,300
Other pools	21,686	21,140
Total	115,000	106,195

In Elk County, Superior Oil Co. spudded No. 1 Rarrick, 600 feet north and 200 feet west of SE cor. Section 22-31-10, and Diller Oil & Gas Co. has made a location for No. 1-A Keys, C E half SE NE Section 26-31-10.

L. H. Wentz and others' test, No. 1 Stockman, SW NE Section 31-26-2w, Sedgwick County, was abandoned at 4,107 feet. The hole filled with water from Viola lime at 4,073-79 feet and Wilcox sand at 4,080-4,107 feet was dry.

Cameron and others' wildcat, No. 1-A Funk, SW SE NW Section 11-26-1, Sedgwick County, was dry and abandoned in Wilcox sand at a total depth of 3,530 feet.

Butler County

In Butler County, Cromwell and Lewis spudded No. 1-A Yetter, NW cor. SE Section 6-28-6. Richmond and others were moving in to No. 1-A Bronsenger, NW cor. SE Section 24-27-3, having abandoned the location in NW SE Section 34-27-3.

Greenwood County

Matthews and Rex completed No. 4 Wilson, NE SW Section 8-24-12, Greenwood County. It was shot with 60 quarts in Bartlesville sand at 1,686-99 feet and pumped 60 bbls. the first 24 hours.

DeGenther and others' No. 1 Garrison, SW NE NW Section 20-25-11, got a hole full of water from Mississippi lime at 1,978-87 feet, and was abandoned.

Aikman and others' No. 1-A Gilroy, SE SW NW Section 24-25-12, was spudded. Markus and Gore were drilling at 780 feet in No. 1 Morris, SW cor. NW Section 5-24-12. Oko Oil Co. was spudding No. 5 Winterscheid, NE NW SE Section 6-24-14.

Reno County

Olson Drilling Co. and Shell Petroleum Corp. had a rig up for No. 4 Roberts, C SW SW Section 25-23-4w, Reno County. No. 2 Roberts was being rigged up with standard tools to complete, total depth 3,263 feet. Same companies and Continental Oil Co. were spudding No. 2 Vogt, C SW NE Section 26-23-4w. Deal Oil & Gas Co. and others had cellar dug for No. 1 McElwain, C SE SE Section 34-23-4w.

The Texas Co. completed No. 1 Stucky, C NW NW Section 36-23-4w, which flowed 803 bbls. in a potential test of 24 hours. It is producing from chat at 3,257-3,360 feet.

Kingman County

Skelly Oil Co.'s No. 1 D. Rouse, CNL SE Section 20-27-10w, Cunningham district, Kingman County, found Viola lime at 4,282 feet and at 1 foot in the hole filled with water. There was a showing of oil and gas. The test was shut down.

McPherson County

Gypsy Oil Co.'s No. 4 Lovett, NE NW NW Section 24-19-2w, Ritz-Canton Field, McPherson County, was completed. It pumped 563 bbls. in 24 hours from Viola lime at 3,389-97 feet.

J. E. Mabee, Inc. and Shell Petroleum Corp. have rig up for No. 6 Friesen, NW SE SE Section 33-21-3w.

Slick, Pryor & Lockhart's No. 4 Stucky, NE NW SW Section 27-20-3w, was dry and abandoned at 3,512 feet.

Gypsy Oil Co. had rig up for No. 3 Stucky, SE NW SE Section 33-20-3w.

Sinclair Prairie Oil Co. was drilling at 480 feet in No. 8 McCurdy, SW NE SE Section 33-20-3w. Palmer, Phillips Petroleum Co. and Shell Petroleum Corp. had cellar dug for No. 3 Ritz, NW NE NW Section 7-20-1w. Lario Oil & Gas Co. and others' No. 1 Hill was being rigged up to deepen from 2,975 feet. Shell Petroleum Corp. made a location for No. 3 Finkle, NE NW Section 23-19-2w. Deiter and others were moving in material at No. 1 Thomas, SE NE SW Section 26-19-2w.

Harvey County

Shell Petroleum Corp.'s No. 3 Voth, NE SE NW Section 4-22-3w, has Hunton lime at 3,518 feet and was rigging up standard tools at a total depth of 3,523 feet.

J. E. Mabee, Inc. and Shell Petroleum Corp.'s No. 1 Nikkell-B was completed. It is in the SW cor. Section 8-22-3w. The well made 947 bbls. on the pump in a potential test, producing from Wilcox sand at 3,560-71 feet, which had been given two small shots.

Skelly Oil Co.'s No. 1 Martens, SE cor. Section 19-22-3w, had Hunton lime at 3,446-63 feet. It swabbed 100 bbls. in four hours and was being rigged up to pump.

Sinclair Prairie Oil Co.'s No. 5 Ediger, SW SE SW Section 19-22-3w, found Hunton lime at 3,326-67 feet. It swabbed 151 bbls. in 24 hours and was then given a 1,000-gallon acid treatment.

Mid-Kansas Oil & Gas Co.'s No. 3 Klassen, NW NE NW Section 30-22-3w, set 5-inch pipe at 3,543 feet and drilled to 3,556 feet. It swabbed 15 bbls. per hour in a test. Wilcox sand was topped at 3,490 feet.

Frost and others were rigging up rotary for No. 6 Martens, SE SW NE SE Section 19-22-3w. J. E. Mabee, Inc. and Shell Petroleum Corp. had rig up for No. 7 Martens, NW NW SE SE Section 19-22-3w.

Wildcat Operations in Kansas

Week Ending February 17

(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARTON COUNTY	
Gypsy Oil Co.'s No. 1 Soderstrom, SE NE NW Sec. 21-17-12w	Coring Siliceous lime 3,521-25 ft.
Skelton et al's No. 1 Ott, C SE SE Sec. 14-19-14w	P.B. to 3,255 ft.; acidized; pumping wtr.
BUTLER COUNTY	
DeGenther et al's No. 1 Marnane, NW cor. Sec. 29-26-3	Cellar.
Yarnell et al's No. 1-A Speer, SE NE NE Sec. 31-33-6e	U.R. 6-in. csg.; T.D. 2,210 ft.
Van Meter et al's No. 1 Moore, NE cor. Sec. 5-35-4	Rig.
ELLIS COUNTY	
Ashby et al's No. 1 Polycyn, NE SE Sec. 12-13-16w (O.W.D.D.)	T.D. 3,165 ft.; S.O. and wtr.
ELK COUNTY	
Lerke et al's No. 1 Macon, C NE NE Sec. 5-31-10	Drlg. 500 ft.
FINNEY COUNTY	
National Ref. Co. et al's No. 1 Smith, C SE SW Sec. 2-23-29w	T.D. 3,323 ft.; fishing.
GREENWOOD COUNTY	
DeGenther et al's No. 1 Garrison, NW NE NW Sec. 20-25-11	H.F.W. 1,978-87 ft.; abd.
Ackman et al's No. 1-A Gilroy, SE SW NW Sec. 24-25-12	Spudded.
HARVEY COUNTY	
Hartman et al's No. 1 Jones, C NW SW Sec. 19-25-1w	T.D. 2,940 ft.; P.B. to 2,921 ft.; pumping wtr.; S.D.
KINGMAN COUNTY	
Stanolind and Amerada's No. 1 Hilger, SE cor. NW Sec. 16-26-4w	Drlg. 2,240 ft.
McPHERSON COUNTY	
Hess & Boersma's No. 1 Berg, C SE SE NE Sec. 15-20-3w	T.D. 3,028 ft.; fishing for csg.
Slick, Pryor & Lockhart's No. 1 Orcineal, SE SW SE Sec. 21-20-3w	Rig.
Foraker & Hutchins' No. 1 Smyser, SE NW Sec. 28-20-3w	Cellar.
Phillips Pet. Co.'s No. 1 Tinsley, C SW SE Sec. 5-2-1w	T.D. 2,953 ft.; running 8-in. csg.
Jim MacIson's No. 1 Boesker, SE NW Sec. 29-20-1w	Spudded.
Harris & Haun's No. 1 Rupp, SW cor. Sec. 12-21-2w	T.D. 3,032 ft.; fishing.
Wakefield & Hawkins' No. 1 Smith, SW SE Sec. 17-17-1w	Drlg. 1,975 ft.
PHILLIPS COUNTY	
Ashby et al's No. 1 Close, C SE Sec. 24-5-18w	Drlg. 1,775 ft.
RENO COUNTY	
Stanolind and Amerada's No. 1 Hilger, SE NW Sec. 16-26-4w	Rigging up.
RICE COUNTY	
Slick, Pryor & Lockhart's No. 1 Schmidt, C NW NW Sec. 15-18-10w	Drlg. 2,725 ft.
El Dorado Ref. Co.'s No. 1 Wernet, SW NE Sec. 12-20-6w	T.D. 3,308 ft.; U.R. 8-in. csg.
Lario O. & G. Co. and Elwell's No. 1 Russell, NE SW Sec. 29-23-7w	T.D. 3,310 ft.; rebldg. rig.
Geo. Dickey et al's No. 1 Hunter, NE cor. Sec. 35-19-7w	S.D. 1,210 ft.
Langston et al's No. 1 Markle, NE SW Sec. 1-20-9w	T.D. 1,057 ft.
Smith & Ash et al's No. 1 Wilkins, SE cor. Sec. 13-17-10w	Rig.
ROOKS COUNTY	
Ashby et al's No. 1 Stockton, C SW SW Sec. 15-8-19w	Moving in.
Phillips Pet. Co.'s No. 1 Dopita, C SW SW Sec. 31-8-17w	Drlg. 203 ft.
RUSSELL COUNTY	
Western Exploration Co.'s No. 1 Andrea, SW cor. Sec. 30-15-12w	Drlg. 1,175 ft.
Tom Palmer's No. 1 Steinle, NW SW Sec. 22-13-14w	2,900 ft. oil in hole, 3,283-86 ft.
SEDGWICK COUNTY	
Cameron et al's No. 1-A Funk, SW SE NW Sec. 6-26-2e	Wilcox sand 3,535 ft.; dry and abd.
D. Lauck and Shoreline Oil Co.'s No. 1 Jordan, NW SW SE Sec. 6-28-1w	Drlg. 1,535 ft.
Wentz et al's No. 1 Stockamr, SW NE Sec. 31-26-2w	Dry and abd.; Wilcox sand 4,080-4,107 ft.
STAFFORD COUNTY	
Vickers Pet. Co. and Phillips Pet. Co.'s No. 1 Cravens, SW NE Sec. 15-25-11w	Drlg. 2,900 ft.
SUMNER COUNTY	
Wentz and Continental Oil Co.'s No. 1 Kerns, SE cor. NE Sec. 6-34-1w	Rig.
WOODSON COUNTY	
Wolf Creek Oil Co.'s No. 1 Larber, NW cor. Sec. 35-25-14	T.D. 796 ft.; fishing.
Lewis Bros.' No. 1 Riggs, SW cor. Sec. 10-26-14	Set pipe at 765 ft.; S.D.

Barton County

Stanolind Oil & Gas Co. has made a location for No. 2 Scheufler, C SE SE Section 9-20-11w, Barton County. Hilligoss and others have rig up for No. 3 Isern, NW SE NE Section 12-20-11w. Hilligoss and others were rigging up No. 3 Isern, NW SE NE Section 12-20-11w.

Rice County

In Rice County, Lario Oil & Gas Co. and others' No. 1 McFarland, SE NE SW Section 7-20-9w, had Siliceous lime at 3,268-76 feet. It swabbed 5 bbls. per hour. Deepened to 3,238 feet it swabbed 155 bbls. in five hours. It may be acidized.

Gypsy Oil Co. completed its No. 2 Malone, SE NW Section 18-20-9w, which flowed 1,692 bbls. in a 24-hour potential test from Siliceous lime at 3,316-35 feet.

Atlantic Oil Producing Co.'s No. 1 Brandenstein, C SE SE Section 10-19-10w, deepened from 3,026 feet to 3,044 feet, made a potential test and flowed 2,328 bbls. of oil and 5,000,000 feet of gas in 24 hours. It was completed.

Skelly Oil Co.'s No. 1 Gill, 660 feet south and 440 feet west of NE cor. Section 16-19-9w, was a hole full of water at 3,033-39 feet.

Slick, Pryor & Lockhart's No. 1 Habinger, NE NW SE Section 27-18-10w, was completed. It made 336 bbls. in a 24-hour potential test, total depth 3,234 feet.

Gypsy Oil Co. spudded No. 3 Christopher, SE NE NE Section 6-20-9w. The Texas Co. had a rig up for No. 1 McFarland, NE SE SW Section 7-20-9w. Empire Oil & Refining Co. was drilling at 310 feet in No. 3 Heckel, NW NE SW Section 18-20-9w, and made a location for No. 4, NE SW Section 18. Gypsy Oil Co. was rigging up standard tools for No. 1-E Malone, SW NE Section 18-20-9w. Foraker and Hutchins have cellar dug for a wildcat test, No. 1 Smyser, SE NW Section 28-20-8w. Courtney and Davis and Gypsy Oil Co. have cellar dug for No. 1 Christopher, SE SW SE Section 31-19-9w. Ramsey and others were spudding No. 1 Johnson, Block 4, Chase townsite, Section 32-19-9w. Robertson and others started a test in the cemetery at Lyons, C SW Section 34-19-8w. It was spudded to 30 feet and shut down. Smith, Ash and others have a rig up for a wildcat test,

No. 1 Wilkins, SE cor. Section 13-17-10w.

Russell County

Tom Palmer's No. 1 Steinle, NW SW Section 22-13-14w, Russell County, a wildcat test, was shut down for tankage. It had 2,900 feet of oil in the hole from Siliceous lime pay at 3,283-86 feet.

Beardmore and Gypsy Oil Co.'s No. 3 Wieland, SW SE SE Section 32-12-16w, was acidized at 3,094-3,128 feet and swabbed 12 bbls. per hour.

Stanolind Oil & Gas Co. was drilling at 340 feet in No. 16 Austin, SE NW SW Section 30-12-15w.

Ashby and others had material in for No. 1 Stockton, C SW SW Section 15-8-19w, Rooks County.

Phillips Petroleum Co. was drilling at 203 feet in No. 1 Dopita, C SW SW Section 31-8-17w, Rooks County.

W. A. RILEY DIES

William Autrey Riley, vice president and general manager of the Barnsdall Refining Co., died last week of pneumonia at his home in Tulsa.

Mr. Riley, who was 45 years old, became ill of a throat disease February 4. He came to Tulsa in November, 1932, from Kansas City, where he had been employed for two years by the Barnsdall company. For 10 years prior he had been employed by the Cities Service Co., with headquarters in Fort Worth. Before going to Cities Service he had been employed 12 years by the Pierce Oil Corp. in Texas.

H. S. KINKADE DIES

ALBUQUERQUE, N. Mex., Feb. 17. H. S. Kinkade, 57, prominent Kansas geologist for many years, died suddenly here while motoring from Arlington, Ariz., to his former home in Sedan, Kans. He was on his way to get his family and move them to Arizona when he was stricken.

Bird's Eye View of a Pumping Power in the East Texas Field

Central pumping power on one of the leases of the Tidewater Oil Co. in the East Texas field installed by Lufkin Foundry and Machine Company

8 "KING-CLIP" features
GATE VALVE

1 Ample packing space. Gland follower in 1 inch and larger sizes.

2 Bronze stem. Strong, heavy threads always in full contact, with valve open or closed. Repacking shoulder at top of thread.

3 No stem-thread corrosion. Bronze bushing cast in bonnet protects threads from contact with iron.

4 Channels to drain bonnet.

5 Horseshoe band disc-stem connection adds strength to bronze disc. Sharply tapered solid wedge disc is well suited to handling heavy fluids.

6 Rolled-in bronze seat rings. Will not loosen and cause leakage.

7 Extra long pipe thread in heavy iron body prevents pipe ends jamming against diaphragm or seat rings.

8 Good workmanship.

The ¼ to 2 inch sizes are recommended for 150 lb. SP (450° F.) or 225 lb. GLP (150 F°.), and the 2-½ to 4 inch sizes for 125 lb. SP or 175 lb. GLP. "King-clip" Gate Valves are also available in outside screw and quick operating types, bronze mounted or all-iron.

BUY FROM THE LOCAL LUNKENHEIMER DISTRIBUTOR

THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO, U. S. A.
NEW YORK CHICAGO BOSTON
PHILADELPHIA SAN FRANCISCO
EXPORT DEPT 318-322 HUDSON ST., NEW YORK

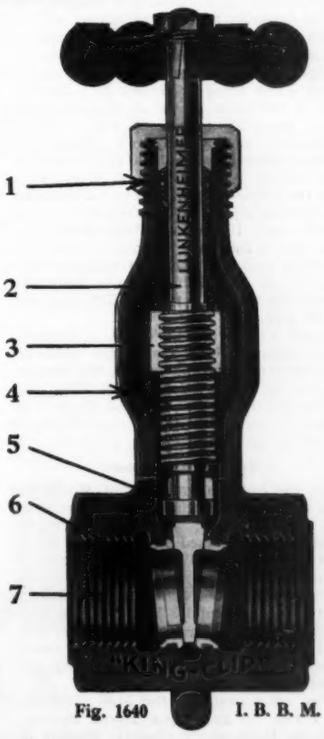


Fig. 1640 I. B. B. M.

LUNKENHEIMER VALVES

6-44-31

Cleveland and Splendora Districts Are Holding Chief Interest in the Gulf Coast District

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Feb. 19.—With several tests now at the critical stage, considerable information pertaining to the new Cleveland Field of northwestern Liberty County and the Splendora district of southeastern Montgomery County is expected to be revealed during the next several days. These areas continue the "hottest" spots on the Gulf Coast, and in view of the active leasing play which has been carried on, the wildcat development is being watched closely by all operators.

Late in the week Gulf Production Co.'s No. 2-C Kirby, two locations (1,866 feet) south of No. 1-C Kirby, the discovery well, completed late last December, in the John Pleasant Survey, northwestern Liberty County, south of Cleveland, was at a total depth of 5,879 feet, or 147 feet below the bottom of the hole in the first well. It topped the Cockfield at 5,648 feet, or 5,507 feet subsea. This is 65 feet lower than in the first well. Also, the pay in the discovery producer was found in the top of the Cockfield.

No. 2-C Kirby lately has been somewhat of a mystery well and very little of a definite nature is known except to the operators themselves. It has 6 or 7 feet of sand between 5,830 feet and 5,840 feet, and at 5,787-91 feet is reported to have had a slight show. It now is reaming and it is probable a string of casing will be run.

An important test at this time in respect to the determination of the Cleveland Field trend is Brown & Wheeler's No. 1 Goldberg, in the J. Eldridge Survey, about 2½ miles southwest of Gulf's discovery well. This well topped the Hockleyensis between 4,860 feet and 4,680 feet actual depth. Elevation is 135 feet. On the above marker, this test is running approximately 25 to 30 feet lower than Gulf's well. It now is drilling below 5,275 feet and if the same interval between the Hockley and the Cockfield exists in this test as in the Gulf well the Cockfield should be topped between 5,713 feet and 5,733 feet.

Gulf Production Co.'s No. 1 Grogan, approximately 4,000 feet to the north of the discovery well, in the Clayton Harper Survey, at latest report was drilling just below 3,000 feet and was not down to a depth of particular interest to indicate a trend in that direction.

Splendora District

In the Splendora district of Montgomery County, approximately 7 miles west of the Cleveland development, Steen Drilling Co. resumed drilling in its No. 1 Texas Long Leaf, Walker County School Land Survey, and at latest report was around 3,600 feet. It is not deep enough to tell much about it. However, the Discorbis was topped between 2,380 feet and 2,411 feet. This test has been shut down several weeks with surface casing cemented at 1,419 feet.

Six miles south of the Steen Drilling Co.'s test, in the Pryor Bryan Survey, also in Montgomery County, Hamill & Smith are drilling another wildcat, which late in the week was below 2,200 feet. This also should be an important test.

San Jacinto County

Weaver & Crim and Shell Petroleum Corp.'s No. 1 Delta Land & Timber Co., in the Sam Lusk Survey, north of the Cleveland play and across the line in San Jacinto County, at latest report was coring sand and shale at 5,152 feet. This test is reported running normal on top of the Hockleyensis which was encountered at 4,050 feet or 3,811 feet subsea.

Polk County

In southern Polk County, some 25 to 30 miles east and a little north of the Cleveland play, Dick Schwab's No. 2 Kirby & West, G. Thomas Survey, tried to blow out when operators tried to pull screen preparatory to deepening the well. This wildcat, the second drilled on the Schwab block about 10 miles southeast of the Livingston Field, was completed late last December, in a sand at a total depth of 4,856 feet, making an estimated 6,000,000 feet of gas and around 75 bbls. daily net oil. Since then it has been standing shut in.

Alpha Petroleum Co. is moving in rig for its first test on its lease recently acquired from Dick Schwab out of the latter's 2,000-acre block. The Alpha location will offset the Schwab-Kirby well to the west. The location which Mr. Schwab made for No. 3 Kirby and West is standing pending the working over of the present well.

Matagorda County

Skelly Oil Co.'s No. 1 Cobb on the Van Vleck geophysical prospect in northern Matagorda County is creating considerable interest as a result of finding a sand showing distillate at 7,023-43 feet. Casing is being run into the hole to 7,000 feet to test. The well was drilled to a total depth of 7,186 feet and after encountering several water sands was plugged to 7,045 feet. The prospect has a close resemblance to Pledger, about 10 miles northeast in Brazoria County, where Danciger Oil & Refining Co. has a couple of wet gassers in a deep sand in the same horizon.

Livingston Field

In the Livingston Field, southern Polk County, Harrison & Abercrombie have made location for the third test on their Carter lease, and are moving in rig. This test, No. 3 Carter, is located out of the northwest corner of the lease in the Mary C. Swinney Survey. This is just south of production and between the field and a well recently abandoned by B. & W. Oil Co., and offsets to the east Humble Oil & Refining Co.'s Granbury lease.

Shell Petroleum Corp., which has been active in the development of the field, is moving out and has "farmed out" some of its holdings. George Reading of Reading & Bates, has taken over Shell's Davis-Holmes 57-acre lease on the northwest side of the field and is planning on working over Shell's No. 1 Davis-Holmes, recently abandoned after numerous and continued unsuccessful attempts to make a producer of it. The well made some oil but efforts to shut off water were unsuccessful. It is understood the new operator will attempt to drill a new hole to the sand. The only other active test in the field is Gem Oil Co.'s No. 3 Davis-Holmes, which, at latest report was drilling below 630 feet after drilling out 10-inch surface casing plug at 610 feet. This lease is in the north end of the field, and adjoins to the east the Shell Davis-Holmes lease which George Reading has just taken over, and is the one on which the discovery well was completed.

Tomball District

At Tomball, in northern Harris County, Humble Oil & Refining Co. has completed its No. 1-A J. M. Brautigan, J. H. Edwards Survey, as the most westerly producer of the field. This originally was completed as a gasser but after working over made initially 144 bbls. daily with bottom of hole at 5,628 feet. The same company completed two additional gassers, No. 1 Hempel, J. N. Hooper Survey, and No. 1-B Quilter, A. Senschal Survey. The former is good for an estimated 2,000,000 feet daily at 5,574 feet, and the latter 3,000,000 feet daily at 5,568 feet. The Quilter gasser is on the extreme east side of the field.

Conroe "Hot Oil"

An increasing amount of "hot oil" production has been reported from the Conroe Field although as a whole the amount is comparatively small, running not more than 1,000 to 1,500 bbls. daily, it is believed. Representatives of the Railroad Commission have been active in the field the past several weeks attempting to check up excess production. Very little encouragement has been offered for the production of "hot" oil in this field due to the difficulty of moving the oil.

Drilling activity in the Conroe Field continues to show a steady decline with the winding up of development programs by the various operators. There now are only about 20 rigs running and as fast as present tests are completed many of these rigs will be moved out.

Old Hull Field

No let-up is being indicated in the play which has been going on in the development of Jackson production along the south side of the old Hull Field in Liberty County. Two additional wells were completed by Humble Oil & Refining Co. during the week, these being No. 13 Hooks, flowing at the rate of 14 bbls. per hour initially from sand and shale at a total depth of 4,738 feet, and No. 34 Hooks-Guedry, which made 69 bbls. the first day at 5,000 feet. Texas Co. has abandoned temporarily its No. 5 Barrow fee after considerable mechanical difficulty and has moved on to No. 6 Barrow. Republic Production Co.'s No. 150 Dolbear, on the extreme east flank of the dome and more than 5,000 feet northeastward around the dome from the play along the south side, late in the week was still making hole, being more than 4,700 feet in the Jackson. The latter is a rank wildcat as far as Jackson exploration is concerned and if production is found it will open an extensive stretch of acreage for development. Fourteen rigs now are running at Hull with several additional wells due for completion.

Citrus Grove

Continental Oil Co. has abandoned its No. 1 Boker, J. W. Criswell Survey, wildcat on the Citrus Grove geophysical prospect in southwestern Matagorda County. For several weeks the company has been trying unsuccessfully to make a gasser out of the well in sand at a depth of 6,003 feet. The hole originally was drilled to a total depth of 6,567 feet and then was plugged to sand at 5,973-6,003 feet.

Vermillion Parish

In Vermillion Parish, Louisiana, Hamill & Smith abandoned their No. 1 Faulk, Section 5-12s-3e, after drilling to a total depth of 8,015 feet. No showings of any kind were encountered. This test was one of a large number of deep tests which have been and still are drilling over southern Louisiana.

Roanoke

At Roanoke, Jefferson Davis Parish, Humble Oil & Refining Co. again is trying to bring in its No. 2 DeVilbiss as a well in a sand at a total depth of 8,423 feet. This is the fifth attempt the company has made without success. The well has flowed a number of heads at times but as yet has not been induced to flow steadily. The well also has shown considerable water. Shell Petroleum Corp.'s No. 1 Kratzer, a mile north of the Humble well on the same geophysical prospect, late in the week was drilling in sandy shale at 5,908 feet. It is expected that this well will go to at least 8,500 feet.

Drilling generally over the Gulf Coast was more or less routine in nature. Leasing interest and geophysical exploration, however, continued active with particular attention now being paid to southern Louisiana.

Gulf Coast Fields and Wildcats

Week Ending February 17

Company, farm and location—	Remarks:
MANVEL—BRAZORIA COUNTY	
Texas Co.'s No. 7-A Belcher, 1,420 ft. S 48 deg. E, 900 ft. W 42 deg. E from NW cor. of W. T. Belcher "A" lease, H. N. Little Sur.	T.D. 5,853 ft.; P.B. 5,199 ft.; sidetracked to 5,528 ft.; P.B. to 5,176 ft.; sidetracked 5,123 ft.; drlg. sand and shale 5,406 ft.
Texas Co.'s No. 9-B Belcher, 2,691 ft. N 42° E from S cor. H. N. Little Sur., and 330 ft. NW at R/A from survey line	Derrick.
Texas Co.'s No. 4 O. F. Ewing, 415 ft. from NW line, Lot 8, and 787.2 ft. from NE line, H. N. Little Sur.	Drlg. shale and lime 3,979 ft.
Texas Co.'s No. 1 S. Scopal, 5,835 ft. from S line and 348 ft. from E and W lines of Lot 25, H.&T.B. Sur., Sec. 74	Drlg. shale and lime 4,247 ft.
STRATTON RIDGE—BRAZORIA COUNTY	
Amerada Pet. Corp.'s No. 5 Seaborn, Austin-Willis ne Sur., 600 ft. E of No. 3 and 229 ft. S at R/A	T.D. 5,909 ft.; lost hole to 1,137 ft.; redrlg. 1,906 ft.
WEST COLUMBIA—BRAZORIA COUNTY	
Miramar Oil Corp.'s No. 1 Hogg, Martin Varner League, 2,500 ft. S line, 50 ft. W line, 200-ac. tract	No report.
BARBERS HILL—CHAMBERS COUNTY	
McAlbert Oil Co.'s No. 2-A Higgins (W.O.), Hodges Sur.	T.D. 5,230 ft.; sidetracking 4,965 ft.
Mills Bennett Prod. Co.'s No. 1-D Barber, 78 ft. S, 65 ft. W of NE cor.	Shale 4,792 ft.; fishing.
Mills Bennett Prod. Co.'s No. 4 Means, 150 ft. W of No. 3, Henry Griffith League	T.D. 5,454 ft.; P.B. to 4,700 ft.; sidetracked to sand 4,839-62 ft.; reaming to set 7-in. csg.
Humble O. & R. Co.'s No. 5-B Kirby, Henry Griffith League, 938 ft. W of E line, 537 ft. N of S line of tract	Drlg. salt 3,207 ft.
Sinclair Prairie Oil Co.'s No. 15 Wilburn, Henry Griffith League, 150 ft. W of No. 14	Drlg. shale 4,781 ft.

(Continued on Page 90)

Let's talk costs

COUBROUGH PROCESS*

*The Coubrough Process is covered by U. S. Patent No. 1,905,156 and other patents allowed and pending.

THE
LUMMUS COMPANY
50 Church St., New York, N.Y.

The Coubrough Process* was developed to reduce the cost of extracting high viscosity lube stocks and homogeneous asphalt from residuum. It is a distinct advancement in economy—and in quality of finished products—over the conventional practice of distilling crude oil in two-stage atmospheric vacuum units.

For the executive concerned with production costs we have some very interesting figures on the economy of the Coubrough Process*—and some equally interesting data on its many engineering advantages.

A discussion of production costs and the Coubrough Process* will not obligate you in any way—and it may lead to very desirable economies.

LUMMUS

PETROLEUM REFINING PLANTS

Discoveries in Pontotoc and Lincoln Counties Center Attention of Oklahoma Operators

By JAMES McINTYRE

The Fitts Pool in southern Pontotoc County, Oklahoma, came into prominence again when Manahan and others' No. 1 Reynolds-Wagner, SW NE SE Section 18-2n-7e, showed signs of being a good producer. Sand was found at 1,730-64 feet and on Saturday the well flowed freely for four minutes and thereafter by heads for several minutes with only brief intervals between the flows. It appeared to be making about 12 to 15 bbls. per hour. The pay is shallower than in other wells in the area and it is usually from the 1,500-foot horizon that big gas is encountered thereabouts. There was not enough gas in this test to flow the oil steadily.

The Fitts area is slow in developing because of the lack of pipe line facilities. The Texas Co. built a 2-inch line from Delaney and others' well in Section 30-2-7 and is also connected to the discovery well of Moore and others in Section 29-2-7. The nearest trunk pipe line is 20 miles distant.

Westheimer & Daube of Ardmore have blocked 2,000 acres in Coal County, east of Pontotoc, and have started a test, No. 1 Lowman, C NE SE Section 18-2-8. F. S. and Elmer Wood of Oklahoma City are blocking acreage east of the Westheimer & Daube block, and Moore & Deaner are expected to start a test in Section 27-2-8 on a block they had assembled some time ago.

Ada, county seat of Pontotoc County, is the local center of all the activity in Pontotoc and Coal Counties and the hotels there are doing a thriving business catering to oil men.

The Gypsy Oil Co. and Carter Oil Co.'s No. 1 Knowles, C NW NW Section 34-17-4w, Crescent Pool, Logan County, got Wilcox sand at 6,261-96 feet. The well made 338 bbls. the first hour and 258 bbls. the second hour. Later it flowed 1,581 bbls. in six hours and was then shut in.

Discovery in Lincoln County

Another pool appears to have been opened in Lincoln County. A well which we have carried in the wildcat report as Huckleberry and others, but which is a community test being drilled by the Twin State Oil Co. for the group of lease owners represented in the 1,520-acre community block, had Wilcox sand at 5,458 feet, and at 3 feet in the well flowed 150 bbls. of oil in one and one-half hours. The oil is low in gravity for Wilcox sand oil, 34 degrees at a temperature of 70° F. The test is located in the SW cor. of Section 25-12-3, about 4 miles west of Meeker.

New Potential Ordered

Instead of ordering the usual four-hour open flow tests, the Corporation Commission orders that the potential of each well in the Wilcox zone in the Oklahoma City Pool for the April potential period shall be determined by declining all wells in the zone 65 per cent of their last previous potential. Operators are given the option of taking a four-hour gauge if dissatisfied with the commission's order. As most of the operators in the field do not favor the open flow tests it is likely that few of them will take advantage of the option. The fear is that open flow tests will be damaging to the wells and cause a big wastage of gas.

Operators in the Simpson zone have been allowed a 2 per cent increase in the allowable production of oil from that zone in order to get their full allowable for the month. Effective on March 1 all underproduction over a two-day quota will be stricken off.

Plains Petroleum Co. asked the commission to establish a 10-bbl. minimum allowable for wells in the Simpson below the Wilcox sand in the Oklahoma City Field in lieu of potential tests. It was said that many of the wells in that zone are unable to make their present allowable on their potentials and that because of water encroachment the decline in oil is rapid.

Oklahoma Production

Estimated daily average production in Oklahoma in the week ending February 17 and in the preceding week was as follows:

	Feb. 17	Feb. 10
Allen	9,035	8,785
Bristow-Slick	10,200	10,200
Cushing-Shamrock	13,500	13,500
Healdton	4,800	9,100
Hewitt	9,100	4,800
Burbank	10,000	10,000
Balance of Osage	22,000	21,500
Lucien	5,845	4,955
Logan County	2,860	1,100
Bowlegs	11,300	9,610
Carr City	6,455	5,540
Earlsboro	10,025	8,590
East Earlsboro	13,525	10,955
South Earlsboro	1,400	1,290
Little River	17,205	13,210
East Little River	835	635
Seminole	11,830	9,700
East Seminole	1,180	1,030
Searight	2,935	2,215
Maud	1,315	1,335
Mission	4,310	4,040
St. Louis-Pearson	24,175	22,895
Cromwell	4,850	4,850
Oklahoma City	174,860	206,365
Tatums	8,350	7,370
Sholem-Alechem	4,700	4,750
Duncan	4,500	4,500
Tonkawa-Garber-Thomas	6,750	6,750
Holdenville-Fish	6,830	6,605
Wewoka	4,650	4,850
Other fields	86,710	83,915
Total	495,080	504,940

Osage County

Mead Oil Co. and Elfred Beck's No. 1, NE cor. SW Section 10-25-6, discovery well of the South Burbank Field, was deepened to 2,856 feet and flowed 1,015 bbls. in 24 hours. It was then shot in sand at 2,824-54 feet and flowed 417 bbls. in five hours. No. 2 on this lease, NW NE SW, was fishing, with the hole at a depth of 2,217 feet, and No. 3, SE cor. SW, was drilling at 1,115 feet.

Champlin Refining Co. completed No. 5, NW SE Section 16-24-7, in the Naval Reserve Pool. This well produced 852 bbls. the first 24 hours. Same company completed No. 6 on the lease, NE NW SE Section 16, which was a 408-bbl. initial producer. Same company was drilling No. 8, C SW NW SE Section 16, at 105 feet, and No. 9, 1,320 feet south and 303 feet east of C Section 16, at 475 feet.

Kasishke and the Lewis Production Co.'s No. 6, SW SE Section 16-24-7, was completed. It had Bartlesville sand at 2,611-90 feet and flowed 260 bbls. in 24 hours. No. 7 on the lease was also completed. It was good for 300 bbls. initially from sand at 2,618-32 feet, which had been shot.

The Idsho Oil Co.'s No. 6, 1,000 feet from the south line and 1,500 feet from the east line NE Section 11-21-11, swabbed 23 bbls. after shots in the Wilcox sand at 2,254-60 feet. Salt water was uncovered in Siliceous lime at 2,344-60 feet, and the hole was plugged back.

Continental Oil Co. and Gypsy Oil Co.'s No. 1, SE NE, an old well deepended, was completed. It flowed 296 bbls. in 24 hours from Bartlesville sand at 2,570-2,618 feet.

New work started in the county included the following operations: Champlin Refining Co.'s No. 1, NW NE Section 15-25-6, building rig; A. H. Kasishke's No. 2, NE SW Section 15-25-6, spudding; R. J. Barrett estate's No. 1, NW NE Section 10-24-7, rigging up; Champlin Refining Co.'s No. 1, SE NW Section 16-24-7, rigged up; same company's No. 2, NE SE NW Section 16, building rig; Lewis Production Co. and Continental Oil Co.'s No. 1, NE SW Section 16-24-7, rigging up; same companies' No. 2, 806 feet south and 300 feet west of C Section 21, rigging up; No. 3, 1,312 feet south and 300 feet west of center, cellar dug; Bay Oil Co. and Branstetter's No. 1, NE SE Section 3-23-7, rigging up; R. J. Barrett's No. 1-A, SW NE Section 16-23-9, spudded.

Northwestern Tests

In Kay County, E. D. Bush has machine in to drill a shallow test, No. 1-A Bush, C NE NE Section 25-28-4.

Acre and others' wildcat test in Alfalfa County, No. 1 Acre was drilling at 6,430 feet.

Noble County

Stanolind Oil & Gas Co.'s wildcat in Noble County, No. 1 Van, SW cor. NE Section 29-21-1w, was drilling at 5,043 feet. It had Wilcox sand at 5,027 feet and a hole full of water at 5,032 feet.

Shell Petroleum Corp.'s No. 1 Hay, C SW SW Section 21-20-2w, Lucien Pool, was completed. It tested 1,160 bbls. in 24 hours with 1,000,000 feet of gas. It had been in for some time and produced from the first and second Wilcox sand, total depth 5,183 feet.

Carter Oil Co.'s No. 1 Weber, C NE SW Section 20-20-2w, had a hole full of oil from first Wilcox sand at 5,020-55 feet, and was drilling at 5,062 feet.

Magnolia Petroleum Co.'s No. 2 Kolb, C NW NW Section 33-20-2w, was drilling at 500 feet.

In the Crescent Pool

The Gypsy Oil Co.'s No. 1 Campion, C SW SW Section 27-17-4w, was running 7-inch pipe, total depth 6,200 feet. It topped the dolomite at 6,165 feet.

Sinclair Prairie Oil Co. completed No. 1 Short, C SW SW NE Section 27-17-4w. It is a 35-bbl. well in Layton sand at 4,907-45 feet. It had been drilled to 6,330 feet and plugged back.

Amerada Petroleum Corp. and Stanolind Oil & Gas Co.'s No. 1 Fouts, NW NE Section 14-17-1w, Langston district, Logan County, was setting 8⅝-inch casing at 5,038 feet. It topped Viola lime at 5,020 feet.

Oklahoma County

In the Oklahoma City Field, Harrell & Davis shot No. 1 Riverside Park, 290 feet from the south line and 140 feet from the east line, SW Section 34-12-3w, at 6,373-6,457 feet, and it flowed 2,012 bbls. in nine hours, with gas at the rate of 2,500,000 feet per day. It was then shut in.

Anderson & Kerr's No. 1 M.K.&T., 113 feet from the north line and 872 feet from the east line, NW Section 3-11-3w, had Wilcox sand at 6,348 feet, set pipe at 6,389 feet and drilled to 6,427 feet. The well was showing 7,000,000 feet of gas with some oil. It was shut in for tankage.

Inland Development Co. has rig up for No. 1 Timken, 1,270 feet south and 605 feet east of C Section 22-11-3w. Wofford Drilling Co. was drilling at 2,130 feet in No. 2 Thomas, 220 feet from the south line and 485 feet from the west line, SE Section 22-11-3w.

Greater Seminole Field

Amerada Petroleum Corp.'s No. 1 Parsons, 330 feet north of south line of Lot 7, Section 12-11-6, north of the Keokuk Pool, in Seminole County, will be plugged back to test the Hunton lime. It had been drilled to 4,684 feet and water rose 3,900 feet in the hole. It was a wildcat test.

The Atlantic Oil Producing Co. and others' No. 1 School land, C NE NW NW Section 36-10-4, Pottawatomie County, will be plugged back to test shallow sands. It had penetrated Wilcox sand at 4,497-4,514 feet and found only salt water.

Carter Oil Co. and others' No. 1 Larney, a community test, C N half NW NW Section 1-10-6, was drilled to 4,470 feet and was plugging back to Wewoka at 2,700 feet. Same operators were moving in rotary to drill No. 1 Jarvis, C E half NE SW Section 18-10-6.

Helmerich & Payne completed No. 1 Lashley-B, NE NW SW Section 25-10-10, Okfuskee County. It was a 40,000,000-foot gas well with 1,250 pounds rock pressure from sand at 3,240-78 feet.

W. E. Fleming completed No. 4 Johnson, NE SW SE SE Section 2-10-11. Okfuskee County, a 35-bbl. well from sand at 1,646-80 feet.

Carter Oil Co.'s No. 1 H. Joe, C W half SE SW Section 2-9-6, in the Seminole area, which was drilled to Wilcox sand at 4,263-70 feet and found only water, was plugged back to Hunton lime at 4,048 feet and acidized. It flowed 723 bbls. in 21 hours and later was flowing 20 bbls. per hour. It was completed. Top of the Hunton was 3,990 feet.

J. Garfield Buel's No. 2 Canard, SE NE NW Section 28-9-10, Hughes County, was plugged back to 3,774 feet, from its total depth of 4,097 feet, and acidized. The well showed a 15,000,000-foot gas production with a spray of oil. The Simpson series was topped at 3,775 feet. The well showed only water in the Wilcox sand.

Texas Co.'s wildcat test, No. 1 Terfertiller, NW NW NE Section 4-8-3, in Pottawatomie County, was dry and abandoned at 5,515 feet. The drill did not miss much in the way of familiar formations, having penetrated Belle City, Hogshooter, Checkerboard lime, Mayes, Woodford, Hunton, Sylvan, Viola and the whole Simpson series but did not find any oil or gas showings.

Sinclair Prairie Oil Co.'s No. 4 Meyers, C NE SW SE Section 32-7-4, South St. Louis area, Pottawatomie County, penetrated dolomite at 4,230-71 feet. The well swabbed 60 bbls. of oil and 70 bbls. of water in nine hours and was plugged back to 4,269 feet. It had not been acidized.

Vaughn and others completed No. 3 Lowther, SW NE SW Section 32-7-4. It is producing from dolomite at 4,180-4,255 feet, total depth, and is a 60-bbl. pumper. The dolomite had been treated with acid.

Phillips Petroleum Co.'s No. 2 Richards, SW cor. SE Section 35-7-4, looked like a failure. It had twice been acidized and produced only a small quantity of oil from dolomite at 4,226-28 feet, total depth 4,238 feet. It was expected the company would abandon it.

In the Holdenville area, Magnolia Petroleum Co.'s No. 2 Witty, 1,180 feet from the north line and 882 feet from the east line, SW Section 22-7-8, Hughes County, was a hole full of oil at 1,158-73 feet and will be put on the pump.

Jones and others completed No. 1 Lucas, NW NE NW Section 2-6-4, Asher area in Pottawatomie County, which pumped 464 bbls. in 24 hours with no

water. The well is producing from dolomite at 4,170-4,224 feet which had not been acidized.

Fleetborn and Gypsy Oil Co.'s No. 1 Bowlegs, NE cor. SW Section 27-8-8, Hughes County, was drilling at 1,435 feet. Deep Rock Oil Corp. had rig up for No. 4 Smith, 550 feet from the north line and 375 feet from the west line, NE Section 30-8-8. Phillips Petroleum Co.'s No. 1 Narcome, SW SE SW Section 10-7-8, was drilling at 1,662 feet. Moore and Denver Producing & Refining Co. were rigging up No. 1 Gray-B, C SE SW NE Section 25-5-4. Hockaberry and others have a rig up for No. 2 Miller, NW SE NW Section 27-5-6. H. & M. Drilling Co. has made a location for No. 1 Adams, SE NW NE Section 25-5-8.

Pawnee and Creek Counties

George Thomas has made a location for a wildcat test in Pawnee County, No. 1 School land, SW cor. Section 13-20-5.

Johnson Oil & Refining Co.'s No. 1 Anthris, NW NE SE Section 30-19-10, Creek County, was shot with 180 quarts at 2,227-60 feet and made a 75-bbl. initial production. It was completed.

O. M. Ireland's No. 2 Partridge, NW SE Section 32-19-11, was dry and abandoned at 2,019 feet.

W. O. Moore and others' No. 1 Swingle, NW SE NE Section 16-18-8, was shot in sand at 2,730-60 feet and flowed 75 bbls. in 24 hours.

F. O. Aikin's No. 12 Wilson, SE NE Section 34-16-8, Olive Pool, is a 75-bbl. completion from sand at 1,260-86 feet.

Doke & Hughes completed No. 3 Rentie, NW SE SE Section 34-18-8, in Layton sand at 1,281-1,310 feet. It started at 100 bbls. a day, following a shot.

Magnolia Petroleum Co.'s No. 1 fee, NE cor. Section 3-17-8, was shot in sand at 1,318-47 feet and started at 75 bbls. a day. It was completed.

New work in Creek County included these operations: National Refining Co.'s No. 1-A Allen, SW SE NW Section 12-19-9, rigged up and shut down; J. B. Cronick and others' No. 1-A Wells, SE cor. Section 36-18-7, spudding; Johnson Oil & Refining Co., drilling at 520 feet in No. 4 Prince, SE NW NE Section 3-18-8; E. L. Robinson's No. 3 Prince, NW SW NE Section 3-18-8, building rig; J. A. Hull's No. 1 Catch, NW NE SW Section 22-18-8, location; Gled Oil Co.'s No. 6 Escoe, CSL SW SE Section 27-18-8, drilling at 575 feet; W. B. Pine's No. 2 Pine, SW NE SE Section 27-18-8, machine; Bay State Oil Co.'s No. 4 Crabtree, C E half SE SW Section 34-16-8, rig on the ground. Doke & Hughes' No. 4 Rentie, SE cor. Section 34-18-8, machine; Papoose Oil Co.'s No. 1 Reed, SE SW Section 6-18-9, rigging up; C. R. Fortner's No. 2 Eufala, NE cor. NW Section 5-18-11, rigging up; J. T. Nunnelee's No. 1 Morton, NW SW NW Section 21-17-7, rigging up rotary; C. W. Titus' No. 1 Casey, SE SW Section 3-17-8, spudded; C. W. Titus' No. 2 Watson, NW SE Section 10-17-8, drilling at 180 feet.

Payne, Logan and Lincoln

R. L. Kemp and Nunally's No. 1 Lingren, NW cor. SW Section 25-17-6, Payne County, found Dutcher sand at 3,100-15 feet. The hole filled with water and the well was abandoned.

Barnsdall Oil Co. and others' No. 1 Seyller, NE cor. SE Section 12-15-4w, Logan County, was drilling at 6,220 feet. It had Hunton lime at 6,109 feet and Sylvan shale at 6,159 feet.

Phillips Petroleum Co.'s No. 1 Rowley, SE SW Section 2-14-3, Chandler Field, Lincoln County, was completed. It was good for 40 bbls. of oil and 500,000 feet of gas from Skinner sand at 4,223-50 feet.

Slick-Urschell Oil Co.'s No. 5 fee, NW NE SW Section 7-14-4, was plugged back to the first Wilcox sand at 5,065-5,105 feet and treated with 1,000 gallons of acid. Slick-Urschell, Inc.'s No. 1 Mayer, NW cor. Section 17-14-4, set 6⅝-inch pipe at 4,990 feet and was drilling at 4,994 feet, and in No. 2 Mayer, SW NW NW Section 17, set 6⅝-inch pipe at 4,991 feet, and was rigging up standard tools to complete. No. 3, NE NW NW Section 17, was drilling at 4,740 feet.

Magnolia Petroleum Co.'s No. 3 Wagner, SW SE SE Section 2-14-3, Lincoln County, was drilling at 510 feet; and rotary was being rigged for No. 4, NE SE SE Section 2. Amerada Petroleum Corp. and Stanolind Oil & Gas Co. were rigging up rotary for No. 4 Brill, NW NE NE Section 11-14-3, and the same companies were rigging up rotary for No. 1 Craig, NW cor. Section 12-14-3. Magnolia Petroleum Co. made a location for No. 5 Telford, SW SE SE Section 7-14-4, and was building rig for No. 5 Gilliam, SE SW SW Section 8-14-4. Sinclair Prairie Oil Co. was drilling at 1,628 feet in No. 2 Mayer, NW NE NW Section 17-14-4. Magnolia Petroleum Co. set 15-inch pipe at 47 feet in No. 3 Wagner, NW NE NE Section 18-14-4.

Wildcat Operations in Oklahoma

Week Ending February 17

Northern Oklahoma

ALFALFA COUNTY

Company, farm and location—	Remarks:
Acre et al's No. 1 Acre, C SW NE Sec. 14-24-11w	Drlg. 6,430 ft.

BECKHAM COUNTY

Phillips Pet. Co. and Ramsey's No. 1 Martin, C NW NE Sec. 27-9-23w	P.B. to 4,075-4,110 ft.; shot with 60 qts.; dry.
West Oak Gas Co. et al's No. 1 Powell, NW SW Sec. 11-9-25w	Drlg. 2,920 ft.

CADDO COUNTY

Denver Prod. & Ref. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w	Drlg. 9,600 ft.

COMANCHE COUNTY

Stores et al's No. 1 Crutcher, C NE Sec. 11-1-12w	S.D. 150 ft.

DEWEY COUNTY

Continental Oil Co.'s No. 1 Beaumer, SW NE Sec. 8-19-20w	Drlg. 4,007 ft.

GARFIELD COUNTY

Stanolind O. & G. Co.'s No. 1 Van, SW NE Sec. 29-21-1w	Drlg. 5,043 ft.
Indian Terr. Illum. Oil Co.'s No. 1 Clark, C NW NW Sec. 34-21-6w	T.D. 6,420 ft.; C.O.
Indian Terr. Illum. Oil Co.'s No. 1 Clark, C NW NW Sec. 34-21-6w	T.D. 6,428 ft.; changing rotary.

GARVIN COUNTY

Anderson & Kerr's No. 1 Rodke, NW NE NW Sec. 31-4-1w	Drlg. 25 ft.
Phillips Pet. Co.'s No. 1 Dennis, SE NE Sec. 9-4-1e	Set 15-in. csg. 196 ft.

HUGHES COUNTY

Dickison et al's No. 1 Webster, NW NE Sec. 22-10-10	Rig on ground.
J. B. Hill's No. 1-A Perkins, C W½ SW SW Sec. 7-5-9	Drlg. 605 ft.
Birk-Kan.'s No. 1 Gardner, NE NW Sec. 22-6-9	**Rig.**
Olympic Oil Co.'s No. 1 McClassen, SE NW NW Sec. 12-9-8	T.D. 600 ft.; lost tools; S.D.
Scruggs et al's No. 1 Black, NE Sec. 13-9-10	H.F.W. 2,988-3,010 ft.; S.D.

KAY COUNTY

E. D. Buck's No. 1-A Bush, C NE NE Sec. 25-28-4	Location.
Burton Lewright et al's No. 1 Leseman, SW NE SE Sec. 4-28-3	Rig.

KIOWA COUNTY

Erickson et al's No. 1 Heatherton, NW SW SW Sec. 14-6-16w	Abd. 577 ft.
Erickson et al's No. 1 Heidell, SW NE SW Sec. 2-6-16w	Abd. 520 ft.

LINCOLN COUNTY

Amerada Pet. and Stanolind O. & G. Co.'s No. 1 Martinek, NW SE Sec. 35-13-5e	Drlg. 4,477 ft.
Huckleberry et al's No. 1 Boland, SW cor. Sec. 25-12-2e	Set 6-in. csg. 5,408 ft.
I. T. I. O. Co.'s No. 1 Stanley, C SE NE NW Sec. 33-14-3	Drlg. 3,100 ft.

LOGAN COUNTY

Anderson & Kerr's No. 1-A Hull, 455 ft. S, 330 ft. W of E cor. Sec. 11-18-4w	Drlg. 4,135 ft.
W. N. Anthony's No. 1 Fruin, SE SW Sec. 4-16-1	Rig.
Amerada and Stanolind's No. 1 Fouts, NW NE Sec. 14-17-1w	Set 8⅝-in. pipe 5,038 ft.
Barnsdall Oil Co. et al's No. 1 Seyller, NE SE Sec. 12-15-4w	Drlg. 6,220 ft.
Jadeka Dev. Co.'s No. 1 Frakes, C SW NE SW Sec. 16-16-4w	Drlg. 2,520 ft.

MUSKOGEE COUNTY

J. S. Routt et al's No. 1 Escoe, CWL SE NE Sec. 17-13-17	T.D. 1,300 ft.; S.D. for 10-in. csg.

OKLAHOMA COUNTY

Springrose Drlg. Co.'s No. 1 Edwards, C SE SE Sec. 19-11-1	4,000 ft. oil in hole; T.D. 6,079 ft.

OSAGE COUNTY

Peters Pet. Co. and Norbla Oil Co.'s No. 1, SW cor. Sec. 15-25-5	Location.

PAYNE COUNTY

L. G. Hulse's No. 1 Sloan, SW NW SE Sec. 19-17-3	P.B. to 1,209 ft.
Mid-Continent Pet. Corp.'s No. 1 Swank, SE NE NE Sec. 19-19-2	Set 7-in. csg. at 4,674 ft.; T.D. 4,726 ft.

PITTSBURG COUNTY

Moffett & Hall's No. 1 Jones, C NE NW Sec. 14-8-14	Lost tools; T.D. 3,200 ft.; S.D.
Stencil Oil Co.'s No. 1 Chunn, SE NW Sec. 29-4-14	Rig.

PONTOTOC COUNTY

Galbreath's No. 1 Stafford, NE SE SE Sec. 31-3-6	Drlg. by tools.
Stanolind-Amerada's No. 1 Aldridge, C N½ S½ SE Sec. 2-5-7	T.D. 4,295 ft.; P.B.; set 6-in. csg. at 2,643 ft.
Westheimer & Daube's No. 1 Lowman, C NE SE Sec. 18-2-8	Moving in rotary.
Delaney et al's No. 1 Dawes-Hardin, SE NW Sec. 30-3-7	Drlg. 1,250 ft.
Williams' No. 1 Kroth, NE SE Sec. 33-3-4	H.F.W. 1,977 ft.

POTTAWATOMIE COUNTY

Deep Rock and Margay's No. 2 Adams, NW NE Sec. 11-6-3	Drlg. 3,340 ft.
Atlantic Oil Prod. Co.'s No. 1 School land, C NE NW NW Sec. 36-10-4	T.D. 4,514 ft.; will P.B.
Texas Co.'s No. 1 Terfertiller, NW NE Sec. 4-8-3	Dry; abd. 5,515 ft.

SEMINOLE COUNTY

John Burns' No. 1-B Shepard, SE NE Sec. 4-8-8 (O. W.D.D.)	T.D. 1,658 ft.; S.D.
Carter Oil Co. et al's No. 1 Jarvis, C E½ NE SW Sec. 18-10-6	Moving in rotary.
Amerada Pet. Corp.'s No. 1 Parsons, 330 ft. N of S line of Lot 7, Sec. 12-11-6	T.D. 4,684 ft.; P.B. to test Hunton.
Flemlee et al's No. 1 Bowlegs, SE NE SW Sec. 1-7-7	S.D. 1,360 ft.

Southern Oklahoma

ATOKA COUNTY

J. D. Boukan's No. 1 Howard, NW SW NW Sec. 20-2s-10e	Drlg. 1,135 ft.
Brookshire et al's No. 1 Rowland, NW NE NE Sec. 18-3s-10e	C.O. 3,443 ft.

CARTER COUNTY

Angle & Lundy's No. 1-A Ringling, NE SW SW Sec. 11-5s-1w	Rig up.
Kilgore et al's No. 1 Williams, SE NW SW Sec. 30-1n-2w	Drlg. 2,195 ft.

GARVIN COUNTY

National Prod. Co.'s No. 1 Littrell, NE cor. Sec. 31-3n-2w	S.D. 299 ft.

MURRAY COUNTY

A. E. Harden's No. 1 Sadler, NE Sec. 19-1-3	Rig.
T. E. Revelle et al's No. 1 Wolfe, NE cor. Sec. 13-1-2	Running 8-in. pipe; T.D. 1,800 ft.
F. E. Revelle's No. 1 Wolfe, NE cor. Sec. 13-1n-2e	Drlg. 2,096 ft.

PUSHMATAHA COUNTY

J. V. Scrivener et al's No. 1 Swink, C NE SE Sec. 29-6s-20e	Setting csg. 410 ft.
Whitehead et al's No. 1 Messer, SE SW SW Sec. 35-2s-18e	T.D. 2,405 ft.; S.D.

STEPHENS COUNTY

J. W. Madison's No. 1 Tussey, SW SE NW Sec. 34-1n-4w	S.D. 3,210 ft.
Geo. Pace et al's No. 1 Siever, SE SW Sec. 4-1n-7w	Cellar and pits.
MacMo Oil Co.'s No. 1 Butler, SW NW SE Sec. 36-2s-7w	S.D. 20 ft.

TILLMAN COUNTY

J. H. Everett's No. 1 Crane, SW cor. Sec. 15-3s-14w	Rig.

Pontotoc County

Lake Oil Co.'s No. 3 Burke, NW NE SE Section 25-5-4, in the Beebe district, Pontotoc County, found pay at 2,600-48 feet, which was shot with 160 quarts. The well was put on the pump and made 550 bbls. of oil and 350 bbls. of water in 24 hours. It was completed.

Harris & Hayes' No. 1-A Cravens, SE cor. SW Section 24-5-5, swabbed 30 bbls. a day from pay at 1,800-10 feet.

Meyers and others' No. 1 Jackson, SW NW NW Section 22-5-6, missed the 1,700-foot sand and was abandoned as dry at 1,765 feet. Barnsdall Oil Co.'s No. 2 Hart, SW NW NW Section 27-5-6, an old well deepened from 1,743 feet, was abandoned as dry at 2,794 feet.

Moore and others' No. 1 Brown, SW cor. NE Section 27-5-6, was completed. It is a very small well, total depth 1,695 feet.

Gilbreath's No. 1-A Butler, SW cor. Section 21-5-8, was dry and abandoned at 925 feet. There was a small showing of oil at 805-20 feet.

Williams' No. 1 Kroth, NE cor. SE Section 33-3-4, was a hole full of water from sand at 1,957-77 feet and was abandoned.

Flowers and others abandoned No. 1 Simmons, NW cor. Section 8-3-6, at 650 feet. It was a hole full of water from sand at 610-20 feet.

Manahan and others' No. 1 Reynold-Wagner, C SW NE SE Section 18-2-7, set 8-inch pipe at 1,726 feet and got McAllister (Booch?) sand at 1,725-64 feet. It was estimated at 10 bbls. an hour while circulating pipe.

Hager and others' No. 1 Reives, SE NE NW Section 6-3-7, was completed as a 500,000-foot gas well at 1,177 feet.

New work in the county included: Moore and Denver Producing & Refining Co.'s No. 1 Gray-B, C SE SW NE Section 25-5-4, rigging up rotary; Hoackaberry's No. 2 Miller, NW SE NW Section 27-5-6, rig; H. & M. Drilling Co.'s No. 1 Adams, SE NW NE Section 25-5-8, location; Boettcher Oil Co.'s No. 1 Burris, NW NE NW Section 27-2-7, spudding; Westheimer & Daube's No. 1 Lowman, C NE SE Section 18-2-8, moving in machine.

Tulsa and Wagoner Counties

In the Bixby Field, Tulsa County, H. W. Bowder's No. 3 Hodge, SW SE SE NW Section 5-17-14, was a 20-bbl. completion in Dutcher sand at 1,478-1,502 feet.

E. Eppler's No. 2 Tamle, SE NE NE Section 6-17-14, was dry and abandoned at a total depth of 1,570 feet. Jackson & Wise found no Dutcher sand in No. 1-A Simms, NW SW NE Section 8-17-14, and were fishing at 1,700 feet.

Compton & Bright's No. 1 Childers, NW SE NW Section 11-17-14, was dry and abandoned at 1,550 feet. F. D. Misener found a 5,000,000-foot gas production in Dutcher sand at 1,482-88 feet in No. 4 Hodge, CSL NE NW Section 8-17-14.

Okmulgee and Muskogee Counties

Beal & Berryhill's No. 1 Johnson, SW SE SE Section 26-15-11, Okmulgee County, had Wilcox sand at 2,836-41 feet, and the hole filled with water. It was abandoned.

Jack Somers' No. 1 Rowe, NW cor. Section 16-15-14, was shot in sand at 787-820 feet, and the well started at 17 bbls. a day. It was completed.

J. Delaney completed No. 2-A Larney, NW SE NW Section 28-15-14. It was shot in sand at 840-960 feet and made 20 bbls. of oil and 10 bbls. of water in 24 hours.

(Continued on Page 80)

Further Extension of Government Wells Likely; Continued Activity in San Patricio County

By B. D. STEVENSON
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Feb. 19.—Close on the heels of Texas Co.'s No. 7-A Duval County Ranch Co. making a producer in the Government Wells sand on the west side of the Eagle Hill Pool in northern Duval County, which is producing from the Cole sand, R. D. Kelley's No. 5 Foster, on the south side of the field, tested 3 thribbles of oil and no water in three minutes from the Government Wells sand and proceeded to set casing. It looks like a sure producer and should be completed by early this week.

Texas Co.'s No. 7-A got gas in the Cole sand at 1,468-1,500 feet but went down to the Government Wells horizon and got some gas at 2,131-41 feet in the upper Government Wells sand but instead of a thick section of the lower Government Wells sand got mostly shales and about 6 feet of sand in the lower part of the section which might have made a well but for drilling too deep and getting water. This test is 660 feet west of production in the Cole sand and R. D. Kelley's No. 5 Foster is 660 feet south of production and got water in the Cole sand but picked up the Government Wells sand at 2,120-47 feet with a good showing of oil. Logs of wells along a line a little to the east seem to indicate a Government Wells sand pool stretching due north and south covering Surveys No. 206 and 270 and possibly some still farther north and south with the field about a half mile wide.

Kelley's No. 5 Foster was due to drill in and test early this week. It is 330 feet from the south line and 1,650 feet from the east line of Survey No. 206. The Eagle Hill Field in the Cole sand at around 1,500 feet consists now of 13 producing wells stretching three-quarters of a mile north and south and is three locations wide at the north end. It is approximately 3 miles north of the North Government Wells Pool and Magnolia is still extending the North Government Wells Pool to the north with no dry holes between it and the Eagle Hill Pool.

Probability is that Shasta Oil Co. which made a location for a Government Wells sand test on the east side of the Eagle Hill Pool but has been waiting for results on Texas Co.'s No. 7-A, will now start drilling and its completion will give a still better line on the Government Wells sand possibilities.

Conway-Campbell Gas Field

Announcement of location of J. S. Bridwell's No. 1 J. D. Sutherland, in Survey No. 122 in Duval County, 5 miles east of the Sarnosa Pool, means development of the Conway-Campbell district. He brought in a gas well in Survey No. 114 on the Hoffman tract at 2,750-59 feet, and Plymouth Oil Co. drilled a well a quarter mile east and got 80 feet of sand but was low in the structure and only the top of the sand carried a showing of oil.

Bridwell's location is a little over a mile north and slightly east of the Conway-Campbell gas well. Conway & Campbell got the sand at minus 2,027 feet, and the Plymouth well, 1,800 feet east, got it at minus 2,055 feet.

Sun, Magnolia, Standard of Kansas, Pure, Plymouth, Benedum & Trees, Duval Oil Corp., Continental and Conway & Campbell are the main leaseholders. The block was originally assembled by Plymouth Oil Co. and the discovery gas well was drilled on acreage farmed out by Plymouth.

Southern McMullen County

Some further wildcatting is to be carried on in southern McMullen County on the Hagist ranch. Rowan & Hope have made location for a test 330 feet from the north line and 1,650 feet from the east line of the S half of Survey No. 14. Several tests have been drilled at various spots over the ranch and seem to indicate more than one structure. Lefevre & Spice abandoned their No. 1 Hagist in Survey No. 17 with a good showing in the Cole sand and indications that it might be on the east edge of a pool. The Rowan & Hope test is 3 miles north and three-quarters of a mile east. Still another test is likely to be drilled down nearer to the Lefevre & Spice well.

In southeastern Webb County, over the week-end a test was expected in Allen & Morris' No. 1 Bruni, about a half mile southeast of the town of Bruni, in sand at 2,950-59 feet which on drill stem test showed 850 pounds of gas in three minutes. This location is in the midst of a bunch of gas wells at 2,340 feet and one test was completed at below 2,400 feet and another at 2,600 feet but there seems to be nothing producing at 2,950 feet, though some tests have been drilled past that depth.

San Patricio County

Plymouth Oil Co. set surface casing at 1,150 feet in its No. 1 Welder in San Patricio County, and C. B. Bunte, Inc., announced tentative location for No. 1 C. C. Smith about 1½ miles south of Odom. This starts the first activity in this strip through central San Patricio County where there has been the "hottest" sort of lease activity. At the southern end of a strip of country about 8 miles wide east and west and 15 miles long north and south beginning at a point about 3 miles north of Sinton and extending south to the Nueces River there has been the keenest interest for the past few months.

The real activity starts in eastern Jackson County and extends southwest to western Nueces County taking in Victoria County with its several new pools, Refugio and San Patricio Counties. In that territory there have been more than a dozen seismograph and other geophysical crews working. This territory commanded attention just before the East Texas boom broke out and a number of major companies sitting in now with big acreage blocks acquired their holdings at that time. Development was delayed until recently. Finding of the Greta Pool has added impetus to the interest in the territory. Also the new pools in Victoria have been found since the majors took their acreage in the pre-East Texas Field days.

The latest lease acquisition in San Patricio County is by Atkins & O'Neil of San Antonio, who leased 3,000 acres out of the Welder ranch adjoining the Nueces River on the north and the southernmost of the big lease blocks.

C. B. Bunte, Inc., acquired 15,000 acres in this territory in two blocks and the first location is as described above. Bunte is also arranging to drill another test in southern Refugio County where he recently completed one wildcat and where his test and three others, one drilled by Atkins & O'Neil, one by Texas Co., and one by Holland Oil Co., standing now at 4,500 feet, seem unquestionably to disclose a big structure of some kind and this influences the situation in San Patricio County next south of Refugio County.

Across the Nueces River south in Nueces County, Nuco Oil Co. (William F. Morgan) is starting a test on the Bluntzer farm at Banquette which is along pretty much the same line of play as that in San Patricio County and north.

Northwestern Starr County

There has been some new interest in northwestern Starr County southwest from Sun Oil Co.'s Cuevitas Pool. Harry Beeler has taken over 10,000 acres in that district and Milihan Drilling Co. was moving in rig last week to drill No. 1 Rogan, in Section 6, of the El Javali grant, about 5 miles southwest of the Sun's Cuevitas Pool. Some blocks were assembled some months ago across the line in Zapata County. Milihan's No. 1 Rogan is close to the county line.

Due south of the Cuevitas Pool, Great Plains was reported late in the week to be bailing. It is in Survey No. 344 and is the test that broke out with a lot of gas during the Christmas holidays, shut down and was delayed getting casing to the location until recently due to heavy rains. It has drilled plugs and some report is due from it on the results.

In southwestern Hidalgo County, Weekly Oil Co.'s No. 1 Guerra, 1,800 feet west of Chancellor & Hall's No. 1 Garcia, ran two tests of sand at 2,938-40 feet and 2,950-59 feet, and though the cores are reported to have shown some oil the tests were failures. But the log is said to be running about 100 feet higher than in Chancellor & Hall's No. 1 Garcia which had a showing at 3,170 feet which held attention for many weeks waiting for casing to be set and a test made. The test proved a disappointment as it made salt water. Weekly's No. 1 Guerra was then located on a theory of the geology of the situation. Depth of Chancellor & Hall's No. 1 Garcia was given by some as 3,070 feet and if the Weekly well is running 100 feet high then it would seem to be in the same sand.

Nothing But Sand

Henderson Coquat's No. 1 Burgess, in Live Oak County, 9 miles west of George West, has been cored from the top of the ground and has been getting scarcely anything but sand all the way down to 2,645 feet, the last depth reported. It got Government Wells at 2,200 feet but with no distinctive shale breaks to make possible identification of the various sands nor of the Mirando sand. At 2,489 feet it was probably in Mirando sand section but was sand all the way from 2,200 feet to 2,489 feet. It has had some showings of oil sands but no trap to hold the oil.

J. C. Yancey has assembled a block of 15,000 acres east of Poth in eastern Wilson County and has made location for a test 5 miles northeast of Poth. This is about 7 miles southeast of where Humble Oil & Refining Co. and Bexar Petroleum Co. recently drilled No. 1 Houston to the Edwards lime at below 5,200 feet. Some evidence of faulting exists 2 miles northeast of Yancey's location where a water well on a ranch is producing gas at 700 feet and has been doing it for many years.

Marts & Beavens, in Bastrop County, got a 500-bbl. well in their No. 6 Reyes in the Cedar Creek Pool. The pool consists of only a few wells and this is one of the biggest. Production is from the Serpentine formation.

Wildcat Operations in Southwest Texas

Week Ending February 17

Company, well, farm name, section and block—	Remarks:
BANDERA COUNTY	
Palm-Winn Oil Co.'s (P. H. Winkle) No. 1 R. B. Watson, 600 ft. N of center of S line of tract in Sur. No. 71, 2 miles N from Medina City	T.D. 862 ft.; drlg. shale.
BASTROP COUNTY	
Chas. E. Anderson's (Ca-Tex O. & G. Dev. Co.) No. 1 Pendergrass, 1,343 ft. from NE line, 310 ft. from SE line of 130-ac. tract in Henry Warnell Sur.	T.D. 830 ft.; drlg.
Humble O. & R. Co.'s No. 1 Ollie Carter, 951 ft. SW from NE cor. and 330 ft. NW from SE line of 117.36-ac. tract near Elgin	T.D. 525 ft.; drlg.
Don B Megahan's No. 1 Charles Holcomb, 350 ft. NW of NW line of W. P. Watts' 75.5-ac. tract, and 400 ft. NE of SW line of John W. Bunton Sur.	Rigging up.
Sun Oil Co.'s No. 1 Page-Probst, 330 ft. from E line, 330 ft. from S line of 103-ac. tract in Andrew Mays Sur.	T.D. 2,919 ft.; abnd. dry.
T. T. Word's No. 1 A. W. Franks, 330 ft. from S and W lines of E 100 acres out of Franks' 177-ac. tract in Nathaniel Deck Sur., 4 miles N from Dale	Abnd.
BEE COUNTY	
Elbert Jeanes' No. 1 G. L. Courtney, 1,600 ft. from E line, 330 ft. from S line of tract, G. A. Kerr Sur., 1½ miles NE of Pettus	Rigging up.
BELL COUNTY	
Gus Winston et al's No. 3 Warrick, 100 ft. N of James Scroggins' No. 1 Warrick, in Elijah Ingram Sur.	T.D. 2,250 ft.; set 6⅝-in. csg.: 2,165 ft.
BEXAR COUNTY	
A. M. Blume's No. 2 Louis Ridder, approximately 2,350 ft. N of RR., 700 ft. E of W line of J. M. Baerera Sur. No. 58	T.D. 214 ft.; drlg.
Cosby et al's No. 1 Ruiz, SE cor. of 82-ac. tract in F. Rowland Sur. No. 48	T.D. 1,480 ft.; S.D.
Dingman & Russell's No. 1 R. J. Coffey, 1,228 ft. from SE line, 1,086 ft. from SW line of 420-ac. tract in Rodriguez Sur.	Derrick.
S. W. Forrester's No. 1 Appelt, 160 ft. E of Corpus Christi Road, 1,666 ft. S of N line of tract in M. Urregias Sur.	T.D. 1,350 ft.; S.D.
S. E. Gantt's No. 1 A. B. Stephen, 2,650 ft. from SW line, 740 ft. from SE line of P. W. Hays Sur.	T.D. 125 ft.; drlg.
Thos. Gorton's No. 1 Edward Jackel, 600 ft. from N line, 800 ft. from E line of tract in J. Ward Sur.	T.D. 500 ft.; drlg.

(Continued on Page 92)

Increased Drilling Expected in California Fields; Deeper Zone Exploitation in Several Areas

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., Feb. 19.—Drilling operations in California, both wildcat exploration and development work in proved fields, have shown a consistent increase during the past several months and unless something unforeseen develops, we may anticipate a rather active period during the remainder of 1934. The increasing tendency is particularly encouraging as drilling operations during 1933 were substantially in excess of 1932 which showed the smallest amount of development work in California since 1915. Increased drilling in proved fields does not indicate a concerted attempt to stimulate production but reflects a return to the normal practice of drilling new wells from time to time to offset the decline consistently registered by producing wells. In addition to development work in proven fields, drilling operations are expanding rapidly in the Mountain View Field of Kern County and in the Montebello Field of Los Angeles Basin, where a new deep zone was discovered by Universal Consolidated in 1933. Drilling operations in both of these fields will show an increasing tendency during the next several months.

In addition to deep zone exploitation now under way in the Montebello Field, it is likely deeper drilling will be started in the Elwood and Inglewood Fields within 60 days. Operators in the latter two fields have formulated tentative development programs and are expected to submit completed plans to the Central Committee after which they will be forwarded to Washington for approval by Secretary Ickes. The proposed development plan covering exploitation of the Sespe in the Elwood Field contemplates the drilling of 29 wells on or before June 16, 1035. Under this agreement, Pacific Western Oil Co. will be allowed to drill 5 wells; Signal Oil & Gas Co., 1; Honolulu Consolidated, 3; Caroline Spalding, 4; Bankline Oil Co., 3, and Barnsdall-Rio Grande combination, 13.

Restrict Drilling

Operators in the Inglewood Field have not yet completed drafting the proposed development program but have practically agreed on the plan to be submitted to the Central Committee and to Secretary Ickes. Operators developing new fields or deeper zones in older areas are obliged to submit a definite drilling program before the field or zone is given a quota.

Operators in the Mountain View Field have received approval of a development program that contemplates the drilling of one well to each 10 acres and a 330-foot setback from property lines. Operators in the Elwood Field, on the other hand, have not committed themselves on an acreage basis but have outlined a program predicated primarily on the drilling of offset wells, irrespective of any other dominating influence. This deviation was deemed advisable as the location of drilling piers precluded a development program predicated on an acreage basis and definite setback from property lines. Operators in the Montebello Field have not yet endorsed a development program acceptable to all parties. Universal Consolidated, Standard and Texas Co. have started several wells to the deep zone and additional drilling is expected within 30 days. Union Oil Co. and St. Helens Petroleum Co. have been marking time in the hope that an agreement might be reached but have about come to the conclusion it would be advisable to undertake development of their respective properties. Union is expected to start a new hole on La Merced acreage and the St. Helens Petroleum has completed tentative plans to drill a new well on the P.&B. lease between Nos. 2 and 5, at present producing from the upper zone.

Restriction Necessary

The necessity of formulating a definite development program in the Elwood, Inglewood, Montebello and Mountain View Fields is especially necessary as Mountain View is in the ascendancy and deeper zones in the other three fields are expected to prove prolific. It is quite obvious that unrestricted development and promiscuous freedom of action would completely demoralize the existing artificial equilibrium and exert an unfavorable effect on crude and refined oil prices. Operators in the Inglewood Field are entitled to limited development as they have been holding the sack for several years. They have retarded development while two new fields have been discovered and several deeper zones opened. A second productive zone was proved in the Inglewood Field several years ago and the geological column indicates probability that one or more additional productive horizons can normally be expected below the second zone in the Inglewood Field.

Improved Conditions

Approval of the California marketing cartel by Secretary Ickes is expected to become a stabilizing factor on the Pacific Coast. If, along with the cartel, the Federal Government would adopt drastic measures to compel compliance with the curtailment program, Pacific Coast marketers could view the future with considerable optimism. Serious deflections and failure to observe curtailment requirements have occurred in the Mountain View, Huntington Beach and Long Beach Fields during the past several months causing a serious recession in refined oil prices since early in December. The marketing cartel guarantees independent refiners a sufficient quantity of crude oil to meet their individual requirements and consequently marketers, both large and small, should decline purchasing crude oil from producers who are not meeting curtailment requirements. Unfortunately, some of the excess production is being sold to independent refiners below standardized quotations and this permits the purchasers to undersell companies paying the regular price.

Operators in the Huntington Beach Field have started a new organization, the Huntington Beach Townsite Association, as a preliminary move to adjudicate problems confronting operators in tideland development. The new association will take over the duties of the Southern California Properties Protective Association, formed several months ago and of which T. W. Simmons is chairman. At the preliminary meeting of the Huntington Beach Association, a temporary directorate was named consisting of representatives from the McVicker-Rood wells, Hamilton Oil Co., Reading Oil Co., Bonita Huntington Oil Co. and wells operated by Earnest Combs. The objective of this new association is to perfect plans for settlement of the controversy between tideland operators and the state. Standard Oil Co. of California has indicated it will grant a pipe line easement through its properties to any operator that makes a satisfactory agreement with the state. Wells producing from state tidelands have drilled under and through intervening property controlled and leased by the Standard. The only exception stipulated by the Standard is that if the company should encounter the casing of a deviated well at some future date, Standard shall have the right of way even though this should necessitate abandonment of the crooked hole.

Developments in the Mountain View Field of Kern County were not especially promising due to the probability that Hogan Petroleum Co. will be obliged to abandon No. 1 Haley as an unsuccessful producer at 6,060 feet. This new well apparently drilled through a cross fault near the bottom of the hole and failed to come up to expectations. Consolidated Oil Ind. Co. made a technical spud in No. 1 Garner-Bristol early in the week but is skidding the rig to comply with regulations regarding the spacing of wells. Mohawk Petroleum Co. is rigging up rotary drilling equipment in No. 2 Hood preparatory to a resumption of drilling at 5,672 feet. This producing well will be deepened to the Santa Margarita expected at approximately 5,800 feet. E. L. Labadie picked up the top of the Santa Margarita in No. 1 Cavanaugh at 5,823 feet and after drilling to 5,888 feet, suspended drilling operations to land a string of 8⅝-inch casing at 5,820 feet. Union Oil Co. has recemented No. 1 K.C.L., an outpost in the extreme western end of the Mountain View Field, with 50 sacks of cement after deepening the hole to 5,787 feet. Four cement jobs were unsuccessful at 5,647 feet and the company drilled to 5,787 feet and recemented 8⅝-inch under pressure at 5,609 feet.

General Petroleum obtained a water shutoff on the 6⅝-inch water string in No. 1 Berry at 9,717 feet and resumed drilling. Previous to the resumption, the well was swabbed but failed to show any indications of commercial production. The strings of casing were landed and the company has the satisfaction of knowing a water shutoff was effected at 9,717 feet. This well, the deepest test in the South Belridge Field of Kern County, is rotating at 10,060 feet. Associated Oil Co. is drilling in No. 1 Williamson in the Lost Hills Field at 7,250 feet but failed to register commercial production up to the present. Ohio Oil Co. is expected to land protective casing in No. 1 K.C.L., a wildcat in the extreme eastern end of Buena Vista Lake.

Mount Poso

Several additional wells are scheduled to be drilled in the Mount Poso Field of Kern County during the year, although this work is not expected to result in any substantial increase in the allowable daily production. The wells scheduled are the result of lease requirements which are rather strict with respect to compulsory offsetting requirements. The Union Oil Co. is completing preliminary preparations on Nos. 9 and 10 on the S.&M. property and both are expected to be spudded within 15 days. Shell Oil Co. is indirectly responsible for the drilling of two new wells in this field by Union as the drilling of No. 1 Mathews fee in Section 4-27-28 forced the latter company to undertake offset drilling. General Petroleum is also expected to undertake additional development in the Mount Poso Field as rig has been erected for No. 9 Heisen and location staked for No. 18 Glide. Bern Oil Co. successfully completed No. 3 in Section 15-27-28 as a commercial producer early in the week as this well, bottomed at 1,910 feet and plugged back to 1,900 feet, was brought in doing 877 bbls. of 17.2 gravity oil per day.

Honolulu Oil Consolidated is expected to swab in No. 15 in the Midway-Sunset Field from 2,936 feet within a fey days. This new well, in Section 14-32-24, was finished in the same zone from which the company brought in a substantial

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	Feb. 4		Jan. 28			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	.....	.....	.....	.....	92,770	.....
Fuel oil	218,638	31,234	546,448	78,064	1,436,561	74,775
Diesel and gas oil	.....	.....	77,981	11,140	152,052	521,454
Gasoline	74,374	10,625	248,979	35,568	477,568	805,972
Kerosene	.....	.....	.....	.....	79,620	250,130
Other finished oil	.....	.....	.....	.....	.....	15,252
Foreign exports—						
Crude oil	.....	.....	266,077	38,011	658,677	781,518
Fuel oil	180,413	25,773	23,978	3,425	776,543	850,511
Diesel and gas oil	131,412	18,773	1,509	216	318,829	383,045
Gasoline	.....	.....	40,837	5,834	466,868	677,396
Kerosene	.....	.....	3,604	515	65,188	266,841
Coastwise-domestic—						
Crude oil	31,975	4,568	.....	.....	119,453	926,503
Fuel oil	170,397	24,342	288,758	41,251	1,064,666	1,133,704
Diesel and gas oil	.....	.....	36,905	5,272	61,444	169,339
Gasoline	181,109	25,873	79,248	11,321	1,144,680	1,145,492
Kerosene	.....	.....	7,392	1,056	7,392	17,754
Naphtha distillates	.....	.....	.....	.....	.....	27,651

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	105,556	15,079	.....	.....	203,549	203,476
Gasoline	.....	.....	72,625	10,375	72,625	.....
Kerosene	.....	.....	80,925	11,561	80,925	154,070
Lubricants	.....	.....	8,310	1,187	8,310	.....
Foreign exports—						
Crude oil	.....	.....	106,947	15,278	183,202	156,073
Fuel oil	15,102	2,157	30,751	4,393	125,204	129,709
Diesel and gas oil	.....	.....	38,266	5,467	144,274	155,353
Gasoline	67,145	9,592	186,952	26,707	332,139	595,286
Kerosene	9,075	1,296	66,952	9,565	86,987	139,143
Lubricants	.....	.....	5,491	784	19,955	20,936
Other unfinished oil	.....	.....	.....	.....	.....	4,881
Coastwise-domestic—						
Fuel oil	83,167	11,881	100,482	14,355	349,313	224,239
Diesel and gas oil	10,476	1,497	.....	.....	36,075	17,467
Gasoline	.....	.....	90,435	12,919	293,539	325,782
Kerosene	.....	.....	.....	.....	7,317	14,953

producer a month or so ago. Merritt-Annex Oil Co. failed to develop commercial production in No. 1 Lakeview after redrilling and deepening the hole from 2,159 feet to 2,656 feet. This well was recently quitclaimed by Union Oil Co. due to expiration of the lease. No. 1 Lakeview was one of the largest wells ever finished in the state and has produced more oil than any other well in the state. It produced approximately 10,000,000 bbls. after it blew in out of control in 1910 and it has been a small but consistent pumper until about a year or so ago. None of the other wells drilled in the immediate vicinity showed substantial production. This condition led to the belief the bit penetrated a fault open at one end. No. 1 Lakeview, drilled early in the life of the field, had a terrific gas pressure due to the enormous drainage area. Standard Oil Co. is starting two new wells in the Midway-Sunset Field of Kern County. Western Gulf Oil Co. is expected to resume drilling in No. 1 S. P. Land Co., a wildcat between Coalinga and Los Banos in Fresno County. A considerable gas showing was logged just previous to landing of casing at 6,555 feet. Western Gulf has blocked approximately 100,000 acres of potential oil and gas land in the area north of Coalinga and the outcome of the initial wildcat is of considerable importance. Several duds have been drilled in this general locality during the past several years but none has been close enough to Western Gulf's test to have any direct bearing on the potentiality of the property.

Huntington Beach

Two new wells were added in the Huntington Beach townlot area during the week and a check indicates probable completion of several more during the next 30 days. Venton Oil Co. wound up the week by completing No. 3 Ames, flowing 875 bbls. of 26.4 gravity oil per day from 5,040 feet. Plymouth Oil Co. completed No. 1 Huntington flowing 852 bbls. of 24.6 gravity oil per day from 6,747 feet after the hole had been redrilled to 5,021 feet and finished with a 4¾-inch liner including 350 feet of perforated. Several of the wells which stopped flowing in the town lot area during the past few weeks have been returned to production as pumping wells.

In the Long Beach Field, J. E. O'Donnell has completed his No. 1 Signal flowing 260 bbls. of 19.6 gravity oil per day and 810,000 feet of gas from a relatively thin zone in the extreme eastern end of the field at 5,990-6,090 feet. The low gravity oil is of extreme importance as it tends to indicate an edge well, the normal gravity of crude oil produced in the Long Beach Field averaging around 26.0 degrees. The abnormally low gravity is not due to a high water cut as current production is showing a cut of approximately only 1 per cent. Dabney-Johnston Oil Corp. finished No. 90 Signal in the Long Beach Field pumping 149 bbls. of 27.2 gravity oil per day from 3,960 feet after the hole had been finished with a 4¾-inch liner carrying 274 feet of perforated.

An explosion and fire severely burned two employes of Equitable Oil Co. when the concern's No. 2 Signal burst into flame. Damage to the well, operated by West American Oil Co., was relatively small. In the Elwood Field, the rig for No. 10 on tideland permit No. 92 collapsed and crashed into the ocean, carrying with it three employes. The derrick, which toppled over without warning, fell partly across the tideland pier, but did not seriously damage the drilling pier. Union Oil Co. is building rig for No. 1 Rice, a wildcat in the Santa Barbara district, on acreage recently subleased from A. N. Macrate and production is expected to be developed at a relatively shallow depth. East Elwood Petroleum Co. is building rig in the southwest corner of the Bishop-Evans lease and this well, if deviated either by whipstocking or use of similar equipment, may bear watching as the objective is ostensibly the Sespe formation which has been proven productive in this field.

Special Exhibits Will Feature Houston Show

Many features that will be of paritcular importance to the various branches of the petroleum industry at the present time will be given at the Oil Equipment and Engineering Exposition in the Convention Hall at Houston, Tex., April 16-21, 1934. These will be instructive as well as interesting and will be in addition to the display of tools and machinery for drilling, production, refining, transportation, gas plants and marketing operations.

Safety, an important factor in field and plant, will be stressed by extensive demonstration work daily. Co-operating are the following associations and organizations which will take an active part in the drills and demonstrations: Houston Safety Association, Houston Fire Department, Houston Police Department, two Houston gas companies, Harris County Emergency Corps, various oil companies and two electric companies.

Every morning and afternoon there will be a demonstration in front of the Convention Hall of fire fighting.

A great deal of interest has recently been focussed on directional drilling by the work recently done in bringing under control the wild crater well in the Conroe Field. The equipment used on this well will be shown and the entire method used in directional drilling will be made available for study. The actual tools used in drilling the relief well will also be on display. The careful application of engineering principles was the means of securing the successful result and this operation will offer an opportunity to study their adaptation to other conditions. Besides the tools used on this particular operation there will be shown survey instruments together with the other tools for controlling the direction and angle of a well as it is being drilled. Engineers trained in this work will be in attendance to advise on well deflection and all types of underground surveying. Details of surveying operations will be illustrated by motion pictures.

Through arrangements made with the U. S. Bureau of Mines at Pittsburgh, Pa., 14 reels of motion pictures showing the various activities of the petroleum industry will be shown.

"The Story of a Rotary Drilled Oil Well" is in two reels and was made in co-operation with the Humble Oil & Refining Co. at the Goose Creek Field in Texas. Animated drawings illustrate the operation of the bit, the circulation of mud and other subsurface work. The latter portion of the film is devoted to the lining of the hole with casing, cementing operations, handling of high gas pressure, etc.

"Through Oil Lands of Europe and Africa" is in three parts and requires seven reels of film. It was made in co-operation with the Pan American Petroleum & Transport Co. and shows oil field operations in practically all the fields of Europe and Africa. "The Story of a Mexican Oil Gusher" is in two reels made in co-operation with the Pan American Petroleum & Transport Co. This picture starts with the discovery of a bubbling seepage in the Mexican jungle, and gives in detail the dramatic scenes in connection with one of Mexico's largest gushers. "Through the Oil Fields of Mexico" is in three reels and was also made in co-operation with the Pan American Petroleum & Transport Co. The modern camps are shown, shipping by tankers, transportation to the port and unloading in an American city.

Free complimentary tickets to the Oil Equipment and Engineering Exposition are being provided for everyone connected with any branch of the industry. It is the aim of the management to make the Houston oil show as highly educational as possible and to provide a means for the oil man to make a thorough study of the tools and machinery which are so necessary for his operation.

J. H. NIGHTENGALE DEAD

John H. Nightengale, proprietor of the Hotel Savoy in Sand Springs, Okla., died on Thursday, February 15, after a long period of ill health. Mr. Nightengale was widely known in the Eastern and Mid-Continent oil fields. He was for years a blacksmith in the shops of Bovaird & Seyfang in Bradford, Pa. Later he went to Parkersburg, W. Va., where he was state commissioner of weights and measures in Governor Hatfield's administration. He moved West and settled in Humboldt, Kans., where for years he produced oil in the shallow eastern Kansas fields. Seven years ago he went into the hotel business. Mrs. W. J. Matych of Tulsa was a daughter of the deceased.

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.	T.	R.	Depth	Status—
General Pet., No. 7 Capitan, Santa Barbara Co.	32-	5-	30	1,463	plug 1,427
General Pet., No. 9 Capitan, Santa Barbara Co.	32-	5-	30	rig	suspended
Shell Oil Co., No. 3 Capitan, Santa Barbara Co.	32-	5-	30	721	sd. sh. drilling
Lincoln Drlg. Co., No. 2 Summerland, Santa Barbara Co.	21-	4-	26	2,803	suspended
Dietzmann, J., No. 1 Summerland, Santa Barbara Co.	16-	4-	26	3,846	plug 3,685
Fairview Oil Co., No. 1 Purisima, Santa Barbara Co.	18-	7-	34	1,760	sd. sh. drilling
Meganos Oil Co., No. 1 Purisima, Santa Barbara Co.	28-	8-	34	3,000	suspended
Barnsdall-Rio Grande, No. 8 Doty Elwood, S. Barbara Co.	15-	4-	29	4,868	fishing D/P
Signal Oil & Gas Co., No. 2 Elwood, Santa Barbara Co.	tideland			5,112	reaming
East Elwood Pet. Co., No. 1 Elwood, Santa Barbara Co.	14-	4-	29	mtl.	building rig
Cuyama Oil Co., No. 1 Cuyama, Santa Barbara Co.	12-	10-	27	3,950	suspended
Union, No. 1 Santa Maria, Santa Barbara Co.	19-	10-	33	mtl.	building rig
Richfield, No. 3 Rincon fee, Ventura Co.	17-	3-	24	2,557	to deepen
Woodrow Pet., No. 1 Rincon, Ventura Co.	4-	3-	24	7,612	fishing D/P
Hancock Oil Co., No. 1 Fillmore, Ventura Co.	13-	4-	19	3,357	recemented
Oil Ridge Oil Co., No. 1 Fillmore, Ventura Co.	1-	4-	19	401	hd. sh. drilling
Chappuis, Louis, No. 1 Sespe, Ventura Co.	1-	4-	20	...	build. road
Kneiper & Atha, No. 1 Bardsdale, Ventura Co.	7-	3-	19	1,720	suspended
Williamson & Donaher, No. 1 Simi, Ventura Co.	36-	3-	18	790	cleaning out
Dabney, H. R., No. 1 Simi, Ventura Co.	22-	2-	18	1,372	sd. sh. drilling
Midlands Pet., No. 1 Ojai, Ventura Co.	9-	3-	23	7,830	redrill 5,990
Laing & Jacobs, No. 1 Shiells, Ventura Co.	32-	4-	19	721	rd. sh. drilling
Wilshire Oil Co., No. 1 Sulphur Mountain, Ventura Co.	20-	4-	21	2,198	suspended
Kirk, W. A., No. 1 Sulphur Mountain, Ventura Co.	21-	4-	21	1,680	br. sh. drilling
Mosher, J. W., No. 1 Santa Paula, Ventura Co.	22-	4-	21	1,803	cleaning out
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22-	3-	20	6,030	fishing D/P
International Oil Developers, No. 1 Conejo, Ventura Co.	23-	2-	20	2,953	hd. sd. drilling
Hub Pet. Co., No. 1 Gould Hills, Kern Co.	22-29-21			6,840	suspended
Shell Oil Co., No. 1 Gould Hills, Kern Co.	21-29-21			2,000	sd. sh. drilling
Standard Oil Co., No. 1 McKittrick, Kern Co.	15-30-22			rig	rigging up
Casa Mira Oil Co., No. 1 Belridge, Kern Co.	29-28-20			4,982	suspended
General Pet., No. 1 Belridge, Kern Co.	30-28-21			10,028	br. sh. drilling
Union Oil Co., No. 18 Belridge, Kern Co.	36-27-20			4,307	cemented
Wrenn, J. J., No. 1 Antelope Plain, Kern Co.	32-25-17			1,674	br. sh. drilling
Pyramid Hills Oil Co., No. 1 Devils Den, Kern Co.	24-25-18			4,140	suspended
Fowler, F., No. 1 Blackwell Corner, Kern Co.	15-26-19			3,178	suspended
North American, No. 1 Jasmine, Kern Co.	25-25-27			....	material
Associated, No. 1 Lost Hills, Kern Co.	2-26-20			7,370	hd. sd. drilling
Howells Bros., No. 1 Round Mountain, Kern Co.	23-28-29			1,801	cleaning out
Semafore Oil Co., No. 1 McVan, Kern Co.	14-27-27			mtl.	building rig
Keno Pet. Co., No. 1 Lerdo, Kern Co.	14-29-27			4,521	suspended
Caribou Record Oil Co., No. 1 Kern Front, Kern Co.	11-28-27			2,104	plug 2,073
Shafter Oil Co., No. 1 Shafter, Kern Co.	8-28-25			1,030	gr. sh. drilling
Ohio Oil Co., No. 1 Buena Vista Lake, Kern Co.	31-31-26			5,660	sd. sh. drilling
Consolidated Oil Synd., No. 1 Union Avenue, Kern Co.	25-30-28			rig	skid rig
Severs Drilling Co., No. 1 Union Avenue, Kern Co.	24-30-28			rig	rigging up
Union Oil Co., No. 1 Union Avenue, Kern Co.	15-30-28			5,787	cemented
Alta Oil Co., No. 1 Union Avenue, Kern Co.	6-30-28			6,470	sd. sh. drilling
Hogan Pet. Co., No. 3 Shell Mountain View, Kern Co.	29-30-29			3,960	sd. sh. drilling
Hogan Pet. Co., No. 2 Mountain View, Kern Co.	29-30-29			6,060	to abandon
Monterey Expl. Co., No. 1 Edison, Kern Co.	15-30-29			2,128	sd. sh. drilling
Labadie, E. L., No. 1 Mountain View, Kern Co.	29-30-29			5,888	cemented
Standard, No. 1 Mountain View, Kern Co.	19-30-29			rig	rigging up
Comanche Oil Co., No. 1 Comanche, Kern Co.	15-32-29			1,830	br. sh. drilling
Badger Oil Co., No. 1 Wheeler Ridge, Kern Co.	31-11-19			5,183	suspended
Gatton & Luethe, No. 1 Madera, Madera Co.	32-10-17			3,020	suspended
Russ Oil Synd., No. 1 Kingsburg, Fresno Co.	20-12-11			3,900	fishing D/P
Bergman, Harry, No. 1 Kingsburg, Fresno Co.	12-12-11			4,550	plug 4,518
Graham & Loftus, No. 1 Raisin City, Fresno Co.	20-15-18			5,906	suspended
Emerich Oil Co., No. 1 Mendota, Fresno Co.	35-13-13			4,360	sd. sh. drilling
Western Gulf, No. 1 S. P., Fresno Co.	3-17-15			7,893	cemented
Hogan Pet. Co., No. 1 Joaquin Ridge, Fresno Co.	28-20-16			6,605	suspended
Kent & McDonald, No. 1 Carrizo Plains, San L. Obispo Co.	2-32-22			3,830	suspended
Panorama Oil Co., No. 1 Carrizo Plains, S. Luis Obispo Co.	2-32-21			mtl.	building rig
Farrel Pet., well No. 1, San Luis Obispo Co.	18-31-12			1,095	cleaning out
Willet Oil Co., No. 1 Cholame, San Luis Obispo Co.	10-25-15			rig	rigged up
Guess, E. B., No. 1 Corcoran, Kings Co.	7-21-21			6,197	suspended
Triune Oil & Gas, No. 1 Tulare Lake, Kings Co.	5-22-20			230	suspended
Commonwealth Consd. Gas Co., No. 1 Tulare Lake, Kings Co.	21-22-20			920	suspended
Tulare Basin Oil Co., No. 1 Tulare Lake, Kings Co.	2-23-19			rig	rigging up
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17			6,873	suspended
Douglas, J. M., well No. 1, Monterey Co.	36-22-	9		1,380	sd. sh. drilling
Na-Pa Oil Co., No. 1 Griffith, Napa Co.	7-	8-	3	3,750	suspended
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	5-	2-	10	4,760	sd. sh. drilling
Pacific Northern Oil Co., No. 1 Guinda, Yolo County	23-12-		3	6,273	hd. sd. drilling
Buttes Oilfields Co., No. 1 Marysville, Sutter Co.	35-16-		1	2,781	gas, shut in
Buttes Oilfields Co., No. 2 Marysville, Sutter Co.	35-16-		1	4,136	Andesite, drlg.
Tehama Pet. Co., well No. 1, Glenn Co.	4-22-		5	4,696	suspended
Milham Exploration Co., No. 1 Tracy, San Joaquin Co.	5-	4-	5	1,318	hd. sh. drilling
Orland Oil Synd., No. 1 Orland, Tehama Co.	31-23-		3	3,890	sd. sh. drilling

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.	T.	R.	Depth	Status—
Palm Ridge Oil Co., No. 1 Palms, Los Angeles Co.	2-	2-	15	7,150	suspended
Clayton, G. L., No. 1 Clearwater, Los Angeles Co.	31-	3-	12	3,000	sd. sh. drilling
Pacific Gulf, No. 1 Athens, Los Angeles Co.	19-	3-	13	6,034	suspended
Pacific Dev. Co., No. 1 Watts, Los Angeles Co.	16-	3-	13	3,902	suspended
Dominguez Oil Co., No. 1 Dominguez, Los Angeles Co.	34-	3-	13	rig	suspended
Quinn, J. B., No. 1 Dominguez, Los Angeles Co.	3-	4-	13	mtl.	building rig
Mutual Oil Co., No. 1 Dominguez, Los Angeles Co.	3-	4-	13	3,225	circulating
Kelly & Son, No. 1 Torrance, Los Angeles Co.	7-	4-	13	6,435	plug 5,770
Wehrman, J. K., No. 1 San Pedro, Los Angeles Co.	14-	5-	14	1,501	chist drilling
Nudson, T. T., No. 1 Inglewood, Los Angeles Co.	17-	2-	14	508	sd. sh. drilling
Scientia Oil Co., No. 1 Inglewood, Los Angeles Co.	7-	2-	14	rig	suspended
Kieps Oil Co., No. 1 Inglewood, Los Angeles Co.	17-	2-	14	....	location
Oakes & Mead, No. 1 Lyndwood, Los Angeles Co.	31-	2-	12	4,940	suspended
Community Oil Co., No. 1 Montebello, Los Angeles Co.	34-	1-	11	5,670	sd. sh. drilling
Universal Consd., No. 2 Montebello Deep, Los Angeles Co.	5-	2-	11	6,602	sd. sh. drilling
Universal Consd., No. 3 Montebello Deep, Los Angeles Co.	5-	2-	11	6,591	sd. sh. drilling
Texas Co., No. 1 Montebello Deep, Los Angeles Co.	6-	2-	11	2,864	sd. sh. drilling
Standard, No. 1 Montebello Deep, Los Angeles Co.	6-	2-	11	2,240	sd. sh. drilling
Midfield Oil Co., No. 1 Pico, Los Angeles Co.	19-	2-	11	2,016	suspended
Frontier Oil Co., No. 1 Pico, Los Angeles Co.	7-	2-	11	....	material
Rex Anglin Dev. Co., No. 1 Los Nietos, Los Angeles Co.	29-	2-	11	150	suspended
Signal Pet., No. 1 Puente, Los Angeles Co.	14-	2-	10	4,908	suspended
Eldorado Pet., No. 1 Puente, Los Angeles Co.	30-	2-	9	3,061	suspended
Barstow Oil Co., No. 1 Saugus, Los Angeles Co.	35-	5-	16	2,136	suspended
Alpha Oil Co., No. 1 Calabasas, Los Angeles Co.	22-	1-	12	1,317	suspended
Alexander, W. L., No. 1 Sunland, Los Angeles Co.	7-	2-	14	400	sd. sh. drilling
Marble, Willard, No. 1 Van Nuys, Los Angeles Co.	6-	2-	16	2,760	suspended
Black Eagle Oil Co., No. 1 Huntington, Orange Co.	tideland			3,850	sd. sh. drilling
Nuoil Oil Co., No. 1 Newport, Orange Co.	29-	6-	10	6,093	sd. sh. drilling
Recovery Oil Co., No. 1 Sunset Beach, Orange Co.	16-	5-	11	3,400	suspended
Superior Oil Co., No. 1 Sunset Beach, Orange Co.	19-	5-	11	4,014	sd. sh. drilling
Placentia Dev. Co., No. 1 Placentia, Orange Co.	31-	3-	9	4,180	hd. sh. drilling
Rubens, Sy., No. 1 Atwood, Orange Co.	19-	3-	9	3,368	pump water
Bardeen Pet., No. 1 Coyote, Orange Co.	13-	3-	10	3,201	prod. test
Spindle Top Oil Co., No. 1 Salton Sea, Riverside Co.	25-	7-	10	3,590	suspended
Great American Pet., No. 1 Chino, San Bernardino Co.	18-	2-	8	2,645	fishing
Great American Pet., No. 2 Chino, San Bernardino Co.	18-	2-	8	2,600	suspended
Tehama Pet., No. 1 Santa Ana Canyon, S. Bernardino Co.	33-	2-	8	1,160	fishing
San Diego Gas & Pet., No. 1 Van Ysidro, San Diego Co.	32-18-		2	....	location

New Mexico Is Seeking Increase in Allowable Due to New Big Wells in the Jal District

By TOLBERT R INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Feb. 19.—Operators in southeastern New Mexico will seek an increase in the state's allowable due to the recent development of big wells in the Jal Pool. Two new locations were reported in the Artesia area in Eddy County. There were no completions in New Mexico. Stanolind Oil & Gas Co. completed its No. 5 Parkinson, on the Iles Dome in Colorado, for an average of 90 bbls. per hour for the first 10 hours. Rocky Mountain Gas Co. completed a gas well on the Craig Dome. There were no new locations in Colorado.

The Frannie Field in Wyoming is shipping out 1,300 bbls. daily, mostly by tank truck. North Central Gas Co. is preparing to drill a 7,000-foot test in Goshen County and Stanolind Oil & Gas Co. will drill a deep test in Fremont County.

Two completions and two locations were reported in the Cut Bank Field in Montana. Santa Rita Oil & Gas Co.'s No. 2 Cardwell swabbed 125 bbls. first 12 hours and Alberta-Pacific Consolidated Oil Co.'s No. 3 Matson swabbed 48 bbls. in six hours.

NEW MEXICO

A meeting of the production committee of the NRA code, of which C. J. Dexter is chairman; Frank Vesley, state land commissioner; E. H. Wells, state geologist, and oil operators, will be held at Artesia next month to discuss a larger allowable for the state. The present allowable is 41,200 bbls. The development of major production in the Jal Pool in wells recently completed makes a revision of the New Mexico figures desirable.

Lea County

Pipe line runs from the Hobbs Pool in January aggregated 1,036,360 bbls., bringing the total runs since proration went into effect to 41,018,711 bbls. There was no important change in potentials or allowable outlet for the first half of February, the field potential on February 1 being 1,296,551 bbls. daily and the allowable 33,537 bbls. daily.

The only active operation in the Hobbs Pool is Noble Brothers' No. 1 Shell-State, SE cor. NW Section 24-18-37, which is spudding.

Texas Co.'s No. 4-A State, C Lot 7, Section 2-21-33, Lea area, is drilling at 3,660 feet in white lime and will be an early completion. Same company's No. 1 Lea, SW cor. NW Section 14-20-34, is shut down at 50 feet in sand. It began spudding January 30. It is 3 miles north of the wells on the Lynch permit. Texas Co.'s No. 2-B Lynch, C SE SW Section 27-20-34, is drilling at 1,630 feet in anhydrite.

Gypsy Oil Co.'s No. 1 La Munyon, C NE NE Section 28-23-37, Cooper area, is running 15½-inch at a total depth of 160 feet. It is bottomed in sand.

In the Jal area, Western-Anton's No. 1 Conditt, C SW SW Section 12-25-36, which obtained a bleeding core at 3,359 feet, was cored to 3,373 feet, ran and cemented 4¾-inch with 125 sacks and is waiting. A big flow of gas in the upper horizons was cased off. Texas Co.'s No. 2 Moberly, C NW SE Section 8-26-37, is drilling at 1,382 feet in salt, and its No. 1-B Sheppard, NW cor. SW Section 5-26-37, is drilling at 3,335 feet in white lime. Humble Oil & Refining Co.'s No. 4-A Lindley, C NW NW Section 24-25-36, cemented 9⅝-inch at 2,890 feet with 600 sacks, and is drilling at 3,010 feet in anhydrite. Barnsdall Oil Corp.'s No. 1 Forrest, NE NW SW Section 24-25-36, has completed water well and is moving in spudder to set surface pipe. Continental Oil Co.'s No. A-24 1 Ascarate, C NW NE Section 24-25-36, is spudding at 10 feet, and Stanolind Oil & Gas Co.'s No. 29-B Farnsworth, C SW SW Section 7-26-37, is shut down for orders after completing cellar and pits.

Eddy County

Stovall & Marshall's No. 1 Mock, C SE SE Section 29-24-27, Black River district, southern Eddy County, was drilled to 2,377 feet and stopped in the sand. At 2,370-75 feet it had a show of oil and gas followed by half a bailerful of salt water. It will plug back and test.

Two new locations were made in the Artesia area in Pecos Valley Gas Co.'s No. 2 Mesa-State, NW Section 4-19-28, and Van P. Welch, Jr., and others' No. 2 State, NW Section 22-17-28.

Grayburg Oil Co.'s No. 5 Burch, C SW NE Section 19-17-30, Majamar area, is waiting on cement. Total depth is 537 feet and the 10-inch is at 483 feet.

Pecos Valley Drilling Co.'s No. 1 McIntyre, NW NW Section 27-23-25, Dark Canon district, is straightreaming to bottom at 2,812 feet, and Ralph Spearow and others' No. 1 McClelland, SW NW NE Section 22-22-23, Indian Creek district, is bottomed at 4,865 feet in black lime and is waiting after cementing the 8¼-inch at 2,207 feet with 100 sacks.

San Juan County

A. R. Goodale and others' No. 1 Hare, NW NE Section 23-29-11w, Bloomfield district, is rigging up rotary, and Aztec Oil Producers, Inc.'s No. 1, C SE SE Section 28-30-11, is drilling at 600 feet. J. F. Cross and others' No. 1 Wilson, SW SE Section 17-30-11w, is drilling at 690 feet. Tom Irwin and others' No. 1 Brink, C NW NW Section 19-28-10w, is drilling at 50 feet in 16-inch hole.

COLORADO

Moffat County

Another good completion on the Iles Dome was reported in Stanolind Oil & Gas Co.'s No. 21-X Parkinson, NE SW NW Section 23-4n-92, which flowed an average of 90 bbls. per hour for 10 hours from the Sundance sand at a total depth of 3,450 feet. The test was through a 3-inch pipe and the flow showed a back pressure of 50 pounds. Top of the Sundance was at 3,421 feet and first oil was at 3,435 feet. The 8⅝-inch was cemented at 3,425 feet. This well is a direct west offset to Texas Co.'s No. 1 Iles Investment, which came in several weeks ago for 1,100 bbls. initial production.

Texas Co.'s No. 5 Parkinson, Lot 13, Section 23-4n-92, which was reported a completion last week, flowing 117 bbls. per hour initial, has been pinched in to 20 bbls. per day.

Rocky Mountain Gas Co.'s No. 2 Bogenschultz, SE cor. Section 9-6n-91, Craig Dome, is temporarily completed at 2,752 feet for 1,000,000 feet of gas per day from the first Morapas sand. Rig will be moved over No. 1 Bogenschultz, the discovery well, to clean out and repair and gas for Craig will in the meantime be supplied from the new well. No. 2 then probably will be deepened to the second and third Morapas sands in which the big gas was found in the discovery.

Larimer County

Eastman & Deininger's No. 1 Cement, NE SE NW Section 30-5n-69, Loveland district, is drilling at 117 feet and making enough gas to burn.

Prowers County

Shastatex Oil & Gas Co.'s No. 1 Lotus Oil, NW NE NE Section 15-23-46, Lamar district, shut down at 2,655 feet since fall, is expected to resume about May 1.

Park County

South Park Oil Co.'s No. 1 Milligan, NE cor. SE Section 13-8s-76, Jefferson district, is swabbing at a total depth of 3,198 feet to test a small show of oil. It has 2,500 feet of water in the hole.

WYOMING

Carbon County

Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-83, Overland Dome, an important wildcat which will be closely watched when it reaches the Dakota series, has underreamed 6¼-inch to bottom at 4,050 feet and is expected to begin making new hole shortly. The formations are running much deeper than the surface geology and geology worked out with core holes indicated and revised figures now put the first Muddy at 4,100 to 4,150 feet, the second Muddy at 4,210 feet and the true Dakota at approximately 4,290 feet. Some of the sections have thickened out considerably and are badly broken. It has had good shows of oil and in a swabbing test several weeks ago before the work of lowering the pipe to present bottom began looked as if it would be good for 200 to 500 bbls. per day. The best show was in the Wall Creek at 3,735-68 feet, with an increase at 4,020-50 feet.

Ohio Oil Co.'s No. 1 A. J. Hazlett, NE NW Section 34-23-79, Allen Lake, is coring and drilling at 3,538 feet and is still feeling for the top of the objective Tensleep. Producers & Refiners Corp.'s No. 4 Wertz, SW cor. SE Section 7-26-89, Wertz Dome, is fishing at 3,070 feet. Total depth is 3,541 feet.

Natrona County

Midway Oil Corp.'s No. 1 Boyer, SW NE NE Section 23-35-79, Midway Dome, is drilling at 4,725 feet, with the second Wall Creek as the next objective.

Goshen County

Another deep test in the Goshen Hole country is scheduled for this spring by North Central Gas Co., affiliated with the New York Oil Co. It will be a short distance to the south and west of Lingle, where the company has secured a large block. The hole is to be carried to 7,000

Deliveries From Turner Valley District Exceed Highest Point During 1933

BY VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Feb. 17.—Deliveries to the Calgary refineries from the Turner Valley Field for January totaled 90,267 bbls., 10,389 bbls. higher than December deliveries, the high point for 1933. Last month's figure was the highest since June, 1931. The January deliveries included 76,624 bbls. of crude naphtha and 4,679 bbls. of light crude oil to Imperial Oil Refineries, Ltd., and 8,964 bbls. to Bell Refinery. Heavy deliveries to Imperial Oil Refineries from Sterling Royalties' No. 1 in South Turner Valley were largely responsible for the increase.

Anaconda in Production

In Section 28-18-2w5, Becker Syndicate's No. 2 Anaconda, LSD 15, has been finished 470 feet in the lime at 5,550 feet with a reported naphtha recovery of over 400 bbls. a day. This is the second large producer completed in Section 28, where most of the active drilling is now being carried on. The gas flow in the lime has been gradually increasing as the hole was deepened. No official estimates of gas production have been given out; it is understood to be less than in some of the other South Turner Valley wells, but with an exceptionally heavy naphtha content.

Cable tools were used throughout, and the well is the largest producer drilled with this equipment since Royalite's No. 4 was brought in nearly 10 years ago. Frank H. Becker was field superintendent, and Robert H. Burns head driller. The test finished with an 8-inch hole in the lime.

Mar Jon Section

Mar Jon Oil Co.'s No. 2 Kindersley, LSD 10, has stopped drilling 515 feet in the lime at 5,445 feet depth, and is bailing rotary fluid. The gas is reported to show a heavy naphtha content. The log shows the well high on structure, and a good producer is anticipated. Pacalta Oils' No. 1, LSD 7, same section, is drilling below 4,460 feet after passing through the Home sand where a small gas flow was encountered. Spooner Oils' No. 5 Anaconda, LSD 1, is drilling below 3,750 feet. These tests are south of the proven area.

New Tests Starting

In the northeast corner of Section 28-18-2w5, Director Royalties' No. 1, LSD 16, has spudded in. Century Royalties' No. 1, LSD 14, also has spudded in. Location is south and west of Sterling Royalties' No. 1 producer.

Acreage in LSD 13, same section, recently purchased by George M. Bell and R. A. Brown from R. W. Brown of Gleichen, Alta., will be tested by Turner Valley Royalties, Ltd., which has been organized by the Bell and Brown interests. Location will be in the N half of

(Continued on Next Page)

feet. Location is 15 miles north of Joyce Hardy and others' No. 1 Peterson, SW cor. Section 21-22-63, which spudded to 100 feet recently and shut down, and 8 to 10 miles southwest of a test drilled to 5,040 feet in 1927 by Foreman Oil Co.

in the NW cor. Section 24-26-62. The North Central company supplies gas to towns and industries in southeastern Wyoming and western Nebraska. This gas is transported from fields in Fremont County and part of the way through the old Sinclair Pipe Line Co.'s oil line converted to gas.

RYERSON STEEL

IMMEDIATE SHIPMENT FROM STOCK

Bars, structurals, rails, sheets, plates, special alloy and tool steels, stainless steel (Allegheny metal) sheets, bars, etc., shafting, welding rod, babbitt, boiler tubes and fittings, wire, reinforcing bars, pipe, copper, brass, turnbuckles, metal working tools, etc.

Write for the Ryerson Stock List.

JOSEPH T. RYERSON & SON INC.

Plants at: Chicago, Milwaukee, St. Louis, Cincinnati, Cleveland, Detroit, Buffalo, Boston, Philadelphia, Jersey City.

Offices at: Tulsa, Houston, Denver, Dallas, Kansas City, Minneapolis, San Francisco.

Natural Gasoline Plant and Gas Lift Equipment

80 H.P. Type 8 Bessemer Compressors; 165 H.P. Type 10 Bessemer Compressors; 180 H.P. Clark Compressors; 185 H.P. Superior Compressors; 200 H.P. Ingersoll-Rand Compressors; 165 H.P. Type E. C. Bessemer Belt Drive Engines; 48x48' Fractional Absorbers; Griscom-Russell Sections; Pritchard Cooling Towers; Tulsa Type Absorption Equipment; Braun Portable Gasoline Plant; Storage Tanks; Turbine Driven Centrifugal Pumps; Steam Pumps; Centrifugal Pumps Belt Driven; Oil Field Boilers; Patterson Steel Buildings; Pipe and Fittings; Line Shaft and Pulleys; DC Electric Generators; Temperature and Pressure Regulators.

Will sell all or part of above at reasonable prices. Guaranteed to be in first class order.

VICTOR GASOLINE COMPANY

CHESTNUT & SMITH BLDG., TULSA, OKLA.

Phones 3-6051—3-4852 P. O. Box 1733

Insist upon the genuine

PATTERSON-BALLAGH PROTECTOR

Adopted as standard by thousands of operators throughout the world. P-B Protectors are stocked in principal oil producing centers. Insist upon the genuine.

The original seamless all rubber protector made in the finest equipped factory, designed for the exclusive manufacture of this super-strength, extra-grip rubber.

PATTERSON-BALLAGH CORP.

1900 E. 65th St. Los Angeles, Calif.

Manufacturers of the genuine P-B Protectors

DISTRIBUTORS:

HOUSTON—516 M. & M. Bldg. TULSA—210 Tuloma Bldg.

NEW YORK—39 Cortlandt St.

Niobrara County

Interstate Oil & Refining Co.'s No. 1 Morrell, NW NE SE Section 2-39-61, West Mule Creek, is drilling at 2,480 feet and believed to be about 30 feet off the objective sand in the base of the Minnelusa. This sand was good for 500 bbls. in the only well drilled on East Mule Creek to that horizon. West Mule Creek is several hundred feet higher than the east dome.

Ed Shogren and others' No. 1 Olinger, NE NW Section 1-36-63, Old Woman Creek, is drilling at 900 feet.

Fremont County

Stanolind Oil & Gas Co., which has done practically no wildcatting in this territory since it took over the Midwest Refining Co. properties, is expected to do some prospecting this year. One test is on the Poison Creek structure 6 miles south of Shoshoni, where it has leased a block and is putting down a series of coredrill holes to locate the apex after checking the surface geology with a magnetometer. As soon as this work is finished it is expected a location will be made and a test started early in the spring.

Converse County

R. J. Dilger and others' No. 1, NE cor. SE Section 32-31-72, Poison Lake district, 18 miles southwest of Douglas, has resumed. It suspended operations last summer at 782 feet when it ran into a crevice and got a crooked hole. This crevice has been filled with 125 tons of material and it now has a straight hole. The syndicate has 5,000 acres under lease.

Wyoming Southern Oil Co.'s No. 1 Government, near C Section 27-32-69, Shawnee structure, was delayed in spudding until February 13. It is being drilled on an acreage basis by S. H. Keoughan with a portable rotary and will go to a sand expected at 720 feet which showed for 1,000,000 feet of gas in a nearby coredrill hole put down by the Phillips Petroleum Co.

Hot Springs County

Empire State Oil Co.'s No. 4 Republic, NE cor. NW Section 14-44-98, Hamilton Dome, is running tubing to test at a total depth of 2,853 feet. It topped the Tensleep at 2,810 feet.

Park County

While there is no drilling in progress in the Frannie Field, there is considerable activity, principally in pumping the wells and moving the oil to market. The field is producing between 1,200 and 1,300 bbls. daily and most of the oil is being moved out in tank trucks by Continental, Standard and independent companies. Three big California type tanks have been placed in operation recently. Additional drilling is scheduled for this spring and it is expected one or more locations will be released shortly.

MONTANA

Glacier County

Two completions and two new locations were reported in the Cut Bank Field this week. Santa Rita Oil & Gas Co.'s No. 2 Cardwell, C Lot 4, approximately SE cor. Section 15-35-6w, swabbed 125 bbls. the first 12 hours from a total depth of 2,885 feet. It found the Cut Bank pay at 2,840-75 feet. The location is on the west side of the pool immediately south of the company's No. 1 Cardwell.

Alberta-Pacific Consolidated Oil Co.'s No. 3 Matson, SW NW SW Section 14-34-6w, swabbed 48 bbls. first six hours and is estimated at 30 to 35 bbls. initial on the pump at a total depth of 2,966 feet. The Cut Bank pay was at 2,936-44 feet.

The two new locations are Texas Co.'s No. 2 Purdy, C NE SW Section 35-35-6w, which is digging slush pits, and the Montana Power Gas Co.'s No. 2 Seeba, 440 feet west of east line and 1,320 feet north of south line, Section 2-34-6w, which is rigging up.

Alberta-Pacific's No. 3 Keisel, NW cor. Section 11-34-6w, is drilling at 540 feet, and A. B. Cobb's No. 2 Walburger, C NW SE Section 35-35-6w, is shut down at 200 feet. Dunstall and others' No. 1 Kennerly, NE NW Section 22-34-6w, is drilling at 1,700 feet, and R. C. Jefferies' No. 1 Clark, C SW SW Section 3-34-6w, at 2,525 feet. Montana Headlight Oil Co.'s No. 2 Williams, C NE NE Section 11-34-6w, is shut down at 580 feet, and Par Oil Co.'s No. 2 Haines, SE cor. SW Section 2-34-6w, cemented 8⅝-inch at 2,780 feet.

Santa Rita Oil & Gas Co.'s No. 1 Whetstone, SE cor. Section 27-35-6w, is at 2,527 feet. Same company's No. 3 drilling at 1,730 feet, and its No. 3 Tribal, C NW NW Section 15-35-6w, at 2,527 feet. Same company's No. 3 Yunck, C SE SW Section 14-34-6w, is drilling at 2,590 feet.

R. C. Tarrant's No. 2 Britton, SW NW SE Section 14-34-6w, is shut down for orders at 2,902 feet, and his No. 3 Britton, C NE SW Section 12-34-6w, is standing rigged. Tarrant's No. 2 Haglund, Sr., C NW NW Section 13-34-6w, is drilling at 2,780 feet, and his No. 1 Winkler, C SW SW Section 23-35-6w, is drilling up iron from bailer at 2,540 feet.

Texas Co.'s No. 1 Antrim, C Lot 4, Section 27-35-6w, is rigged and waiting for water well, and its No. 1 Purdy, SE cor. SW Section 35-35-6w, is waiting for spudder at 2,839 feet to drill in. Texas Co.'s No. 1 Yunck, NW SW Section 14-35-6w, is drilling at 2,250 feet, and its No. 1 Haggerty, SE cor. Section 9-34-6w, is installing pumping equipment. The last named had 2,000 feet of oil at 3,031 feet, total depth.

Hill County

Northwest Utilities Co.'s No. 1 State, C NW NE Section 16-32-17, Box Elder district, is resuming at 100 feet after completing rigging.

Carbon County

Carbon Oil & Gas Co.'s No. 1 Armstrong, SW cor. NW Section 7-7s-22, Dry Creek, which came in as a flowing well two years ago, but which has fought bottom water almost continuously without being able to plug it off, is reported to have contracted with S. H. Keoughan to drill deeper. At last reports it was redrilling at 5,605 feet. Total depth of old hole is 5,710 feet.

Teton County

R. C. Tarrant's No. 1 Porter, SE cor. NE Section 35-27-5w, West Pondera, has landed the 8⅝-inch on bottom at 1,950 feet and resumed drilling.

Gallatin County

Ben W. Ryan's No. 1 Tice, NE cor. Section 28-1n-2e, Three Forks district, is drilling at 1,100 feet, and Montana Gas & Petroleum Corp.'s No. 1 Adams, SE cor. Section 36-2n-1e, has rebuilt rig and is drilling at 1,800 feet.

Liberty County

Harold Hayes and others' No. 1 Strode, NW SW Section 3-36-4e, Sweetgrass Hills, had a show for 1,000,000 feet of gas in the top of the Sunburst sand at 1,390 feet, followed by a show of oil, and is drilling to the second sand.

Canadian Fields

(Continued from Preceding Page)

LSD 13, thought to be on the west flank of the structure.

Preliminary arrangements are being made by the W. Fay Becker Syndicate of Calgary for drilling of a new test in LSD 3, Section 28-18-2w5, on acreage held by Harry G. Morris and Stewart Goodfellow of Vancouver. The Becker interests are also handling Richfield Royalties' No. 1 in LSD 5, on the west side of the structure. Richfield Royalties, Ltd., is headed by W. Fay Becker and Alfred Cooper, and will drill on acreage of Richfield Petroleums, Ltd. Test is to spud in before April 1.

British Dominion Oil & Development Corp.'s No. 4, LSD 6, Section 28-18-2w5.

is installing equipment, brought down from Central Turner Valley.

In Section 29-18-2w5, Excelsior Royalties, Ltd., of Calgary has made a new location in LSD 16, west of the new Richfield Royalties' No. 1 test in LSD 13, Section 28. Test is expected to spud in before April. This well on the west flank of the structure will further test the crude oil possibilities in the deep lime.

South Turner Valley

In the South Turner Valley, Nolan-Hungerford Royalties' No. 1 Rand, LSD 5, Section 34-18-2w5, will resume from 280 feet where 18-inch casing was cemented. On the east flank, Northwest Co.'s No. 1 C. & E.-Longview is drilling below 4,404 feet.

In the far south end, Highwood-Sarcee's No. 1 is drilling below 4,600 feet in the lower Kootenay, a mile south of production. The bottom of the Kootenay, normally, is only a few hundred feet from the top of the lime, so indications are the drill should reach the producing horizon at practically normal depth unless unexpected faulting is encountered.

Central Turner Valley

In the Central Turner Valley, Okalta Oils' No. 4, LSD 8, Section 1-20-3w5, has developed further casing trouble, the pipe parting at 2,370 feet while pulling, leaving about 500 feet in the hole. It is now being sidetracked.

Shareholders of Hylo Oils, Ltd., at their meeting at Calgary recently elected the following directors: S. H. Adams, R. J. Gathergood, Albert C. Johnson, L. L. Thompson and D. P. McDonald.

Shareholders of Sterling Pacific Oil Co. meeting at Vancouver on February 10 approved the deal whereby Royalite Oil Co. takes over company's acreage and deep lime production in Section 33-18-2w5, South Turner Valley.

Tests in the Foothills

On the Moose Mountain structure west of Calgary, Elbow Oils' No. 1, LSD 11, Section 35-22-5w5, is below 3,795 feet and has gone through about 185 feet of exceptionally hard formation.

On the Pekisko Hills structure south of the Turner Valley Field, Pekisko Hills Co.'s No. 1, LSD 6, Section 6-17-2w5, has been held up through a windstorm wrecking derrick. The test is reported going again. Location is close to the Prince of Wales ranch, and south of the tests drilled some years ago on the Highwood structure. Drilling is in a depression of the foothills similar to that in which the Turner Valley Field is situated, and apparently formed as the result of prehistoric glacial erosion of the crest of a structure. The surrounding hills show outcrops of the McDougall Segur and Home sands and the Dakota coal seam marker, so that the horizons productive in the Turner Valley Field should be close to the surface. The company was organized by Dr. Robin Willis, who geologized the structure, and B. F. Hake is associated with the venture. A number of the earlier Alberta oil companies have extensive holdings in the vicinity, earlier drilling by Alberta Associated Oils, Ltd., having secured encouraging shows of light crude in the same general area though not on the immediate structure.

Still farther south, Mar Jon Oil Co. is expected to start a wildcat test this spring on the Watson structure near Lundbreck, where it has taken over the acreage of Southfield Petroleums, Ltd.

Border Fields

On the international Reserve Dome structure, Southern Alberta, Rialto Oils' No. 1, LSD 4, Section 15-1-9w, is drilling below 2,960 feet after water shutoff at 2,950 feet. Several oil shows have been met and commercial production is looked for at the Madison lime contact, around 3,050 feet.

British Columbia Operations

In southeastern British Columbia, Columbia Oils' No. 1, on the Sage Creek structure, is drilling below 1,570 feet and logging considerably shallower than Crow's Nest-Glacier's No. 1. At the present depth the tools have got through a very hard formation and are working in a soft gray rock. Crow's Nest-Glacier's No. 1 got good shows of light crude around 3,250 feet, and Columbia's No. 1 was started with a potential oil horizon at 3,500 feet as the objective.

Harry E. Waid of Victoria, British Columbia, is reported arranging a test for shallow gas production on the British Columbia-Washington boundary near Kent, Washington.

Rialto Gets Ellis Sand

On the Alberta end of the international Reserve Dome, Rialto Oils' No. 1, LSD 4, Section 15-1-9w4, got the Ellis sand at 3,075 feet. Gas was encountered with a show of oil. It is approximately 4 miles north of Patterson Syndicate's No. 1 test on the Whitlash structure in Montana, which is reported flowing 40 to 50 bbls. a day.

Brooke Oil Operations

In the Ontario fields, Leo A. Wilson Syndicate's No. 1 discovery well on the Fred Aitkinson farm, Lot 23, Concession 13, Brooke Township, is making 15 bbls. a day, while No. 2 on the Harry Watson farm, Lot 29, same concession, between 2 and 3 miles east, is good for 25 bbls. a day. No. 3 is drilling on the Bowie farm, Lot 26, Concession 12, Brooke Township, and No. 4 has been spotted on the Hair property, Lot 28, Concession 12. G. F. Gregory & Son of Petrolia have a location in Lot 27, Concession 11, for Leo Wilson of Sarnia, and will drill another in Lot 28, Concession 11. E. Kells of Petrolia is setting up a rig in Lot 27, Concession 12. James Miller of Sarnia is operating in Lot 22, Concession 14, for Bert Wilson of Sarnia, and is reported to have a contract for a second test.

Fred Craft and Elmer Spaulding of Detroit have leased considerable acreage. George Willetts of Bothwell is drilling for them in Lot 29, Concession 12. Mr. Willetts also has a rig in Lot 27, Concession 13, for McLellan & Blake of Detroit. A Windsor syndicate headed by Chandler Walker of Walkerville has let the contract for a test on Lot 15, Concession 12. A. H. Welch of Petrolia has a location in Lot 24, Concession 11. Union Gas Co. of Chatham is reported to have leased the Greer and Watt farms in Concession 14.

ALBERTA GEOLOGISTS MEET

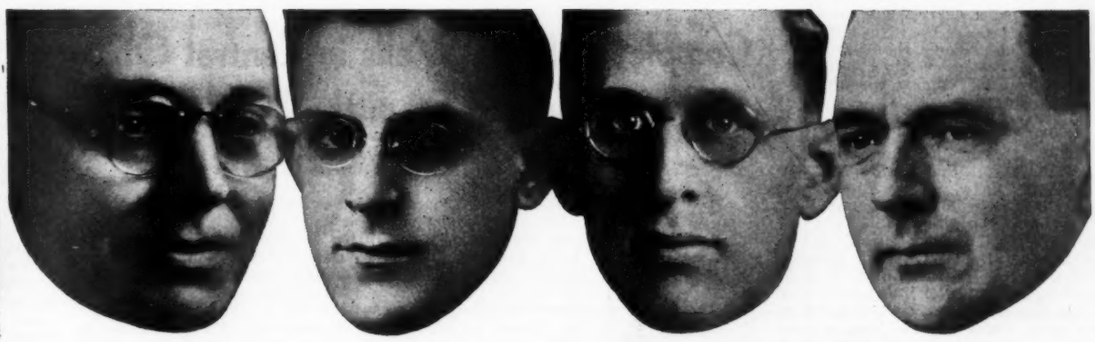
CALGARY, Alberta, Feb. 17.—At the annual meeting of the Alberta Society of Petroleum Geologists, the following officers were elected: President, G. R. Elliott; vice president, G. Spratt; secretary-treasurer, E. J. P. Van der Linden; business representative, S. E. Slipper. Members gave nine papers on Alberta geology and related topics: Dr. R. Willis, on "Pekisko Structure"; B. F. Hake, R. Willis and C. Addison, on "Fault Problems in the Brazeau District"; J. S. Irwin on "Cut Bank Oil and Gas Field"; Dr. J. O. G. Sanderson on "General Features of South Saskatchewan Geology"; H. M. Hunter on "A Deadweight Pressure Gauge"; R. V. Johnson on "Discussion of Professional Fees in Geology"; B. L. Thorne on "Completion of the D. B. Dowling Memorial" and Dr. T. A. Link on "Petroleum Industry at the Century of Progress Exhibition."

R. J. HANNA DIES

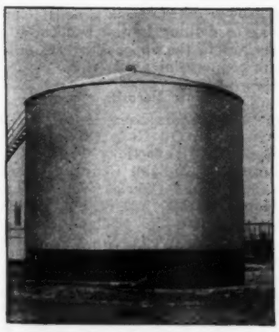
SAN FRANCISCO, Calif., Feb. 17.—Richard J. Hanna, 73 years of age, retired vice president of the Standard Oil Co. of California, died at a hospital here following a relapse from an operation.

A native of Franklin, Pa., Mr. Hanna came to the Pacific Coast 18 years ago and had served with Standard Oil interests for 45 years prior to his retirement in 1930.

FOR TANK PROTECTION—After exhaustive tests, hundreds of smart paint buyers have selected "Silvr-Cool" as the best protection for tanks of various kinds. Its protection and its beauty last far longer than "ordinary" aluminum paint. Yet it actually costs less! Write for any details you want to know.



EXPERTS TELL WHY *Silvr-Cool* CUTS EVAPORATION LOSSES



CHECKS CORROSION—"Silvr-Cool" on oil tanks protects surfaces, especially steel protective coatings, turns away light, heat ... even destructive ultra-violet rays after many years of exposure ... cuts evaporation losses ... checks corrosion ... saves money for petroleum concerns. Whatever your paint problems, Degraco can solve them. Write at once, asking for further details. No obligation.

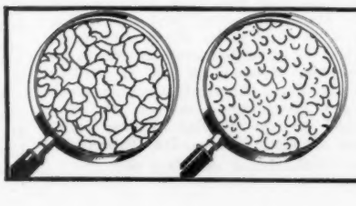
CHECKS CORROSION CUTS PAINT COSTS

It sounds sensational ... almost incredible ... yet tests by paint experts prove that "Silvr-Cool" reflects heat and controls temperatures as much as 32% better than "ordinary" aluminum paint.

Here's the secret. By a remarkable "drubbing" process the tiny aluminum flakes in "Silvr-Cool" are burnished into millions of little "mirrors" that are made to lie flat when the film dries, (called "leafing"). The metallic coating presents an intensely brilliant surface that turns away light and heat rays ... even destructive ultra-violet rays.

You can instantly tell the difference between "Silvr-Cool" and "ordinary" aluminum paint. "Silvr-Cool" is far more brilliant ... stays more brilliant. Yet it is not high priced. Far from it. Actually "Silvr-Cool" is the lowest cost protection you can buy.

Get Degraco's new and ingenious "Easy-Way Paint Chart" that tells where to use "Silvr-Cool" and other paints for scores of uses. It's free. Just mail the coupon.



Drawings show how the tiny, thin "mirrors" in "Silvr-Cool" (left) lie flat ... "leaf" ... as the film dries, while the irregular, jagged particles in "ordinary" aluminum paint (right) are deposited somewhat like a layer of broken stone. The trick of making the flakes lie flat is the secret of "Silvr-Cool" superiority. Write for details.

DEGRACO PAINTS VARNISHES ENAMELS

Offices and Warehouses in Principal Industrial Centers

Write Today

DETROIT GRAPHITE COMPANY,
536 Twelfth St., Detroit, U. S. A.

Please send me free, one copy of your new "Easy-Way Paint Chart" that gives solutions for paint problems.

☐ Check here if you want additional information about "Silvr-Cool."

Name_____

Address_____

Prospective New Pool Discovered in Michigan in Denver Township, Isabella County, Test

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., Feb. 19.—The discovery well of a prospective new oil pool in Denver Township, Isabella County, and an important new extension of the Ogemaw County upper Traverse oil pool were the high lights of the week in Michigan where the most severe cold wave in 35 years slightly delayed drilling operations.

Of primary interest was the completion by the McClanahan Oil Co. of its No. 1 Stanley Demski, SE SE SE Section 28-15n-3w, Denver Township, as an estimated 1,000-bbl. initial producer in the Dundee pay sands. Dundee limestone was topped at 3,580 feet and pay sands at 3,620 feet, the well flowing 60 bbls. in the first hour. A large flow of gas, first encountered 29 feet in, also was reported.

The Demski well is more than 2 miles east of production in the Leaton Pool in the same township and will open several hundred acres to early development. The new well lies about half way between the Leaton and Chippewa pools, both in Isabella County.

Robert T. Jones and E. Arthur Durham's No. 1 Hugh Allen, SW NW SE Section 20-22n-2e, West Branch Township, Ogemaw County, was drilled in for 50 bbls. initial in the upper Traverse formation at 1,753 to 1,775 feet by the Muskegon Development Co. It was to be acid treated before completion with a probability of doubling or tripling the initial flow. Oil was accompanied by a flow of gas estimated at 200,000 feet a day. Located a quarter mile northwest of the Theodore Oil Co.'s No. 1 Ogemaw Country Club producer, the Allen well is an important extensioner in a field where several Traverse failures recently have been reported.

Porter Pool

Only one completion, Stork Oil Co.'s No. 3 Jesse B. Richmond, SW NW SW Section 22-13n-1w, was reported in the Porter Township, Midland County Pool. It was brought in with an initial of about 300 bbls. of oil and considerable gas in the Dundee. Bradner-Vaughan Development Co.'s No. 1 Farmers State Bank of Breckenridge, SW NE SW Section 9, a Porter Township outpost which failed to flow when drilled into the Dundee three weeks ago, pumped 150 bbls. in the first day after a second acid treatment. Seven other wells were shut down on top of the Dundee ready to be completed soon. They include J. S. Braden's No. 1 J. T. McCallum, NE SE SE Section 20; J. W. Campbell and Vera Nunn's No. 1 H. W. Fordney, NE SW SE Section 18; Gordon Oil Co.'s No. 2 Teater-Baxter, NE SW NW Section 22; Charles W. Teater's No. 4 J. M. Wale, NE NE NW, and No. 6 J. M. Wale, SW NE NW, both in Section 22; W. J. Wilson, trustee's No. 2 Hathaway, NE NE NW Section 18; and M. D. and R. A. Wells' No. 1 Joseph H. Otway, SE SE SW Section 22. Five other active wells are drilling in or near the Traverse limestone in Porter Township.

Vernon Township

Mellon and Pollock's No. 3 George S. House, N NW Section 26-16n-4w, Vernon Township, Isabella County, drilled into the Dundee with only a light show which may be treated if the well is now abandoned. Six other Vernon projects are nearing the Dundee. They are: National Petroleum Corp.'s No. 1 Harry Wild, SE SE NW Section 21, shut down for casing at 3,640 feet; V. M. Voorhees' No. 1-A Brief, NW NW SW Section 22; Mammoth Petroleum Corp.'s No. 2 Marceilles, SW NW SE Section 23; Templemayr & Tope's No. 2 George Woods, S NW Section 22, and same operators' No. 3 Edwin L. and R. A. Russell, N NW Section 22; and Dokenva Gas Corp.'s No. 1 James Walsh, NE NW SW Section 15.

Greendale Township

McClanahan Oil Co.'s No. 2 Mae Speerbecker, Section 13-14n-2w, Greendale Township, Midland County, started flowing an estimated initial of 500 bbls. a day after acid treatment in the Dundee. It flowed 40 bbls. the first hour and 350 bbls., filling available field storage tanks, in 17 hours prior to being shut in. Branigar, Giffert & Reasor's No. 1 Fred and Hattie B. Sias, SE NW SE Section 8, Greendale Township, is shut down on top of the Dundee ready to drill in.

Mecosta County

J. M. Taggart and others shot off a bit stuck in the hole in their fifth well in the Austin Township, Mecosta County gas pool, and cemented casing at 1,345 feet ready to drill in.

The new well on the M. E. Darrah lease, C SE NE Section 5-14n-9w, Austin Township, is believed within a few feet of the Michigan gas sands.

Ogemaw County

The first test in Horton Township, Ogemaw County, William McK. Smith and Hagan & Hagan's No. 1 Meid, NE NW NW Section 2-21n-2e, a mile south of the Webber-Wilcox discovery well in Section 34, West Branch Township, Ogemaw County, was nearing completion in the upper Traverse. Joseph Malloy and associates' No. 1 Levi W. Dack, SW SW SW Section 21-22n-2e, West Branch Township, drilled into water in the upper Traverse and was shut down pending decision to deepen to the Dundee or abandon.

Dr. C. L. Hess' No. 1 Fisk Brothers, SE SW SW Section 27, West Branch Township, was shut down at about 2,600 feet after two oil shows in the Dundee, neither commercial. The well also had a good flow of gas in lower Traverse after failure in upper Traverse.

Pure Oil Co.'s No. 1 Fisk, SW SE SW Section 27, also West Branch Township, was drilling at about 2,400 feet after a flow of gas in the lower Traverse at about 2,000 feet that blew the water out of the hole. It will be carried to the Dundee as will several other tests recently unsuccessful in the upper Traverse, the only commercial producing horizon yet encountered in Ogemaw County. Half a dozen other Ogemaw tests are active in this area 50 miles north of the Mount Pleasant area.

Central Michigan Wildcats

Two important central Michigan wildcats were drilling in or near the Dundee with prospects of early completion. McClanahan Oil Co. was nearing completion of its No. 1 Brooks, SW SW SE Section 11-13n-1e, Mount Haley Township, Midland County, with formations reported running high compared with a previous test which had a show of oil in the Dundee. The Brooks well is about 5 miles northeast of production in the Porter Pool.

W. J. Bernier's No. 1 Flood, NE NE Section 9-16n-4w, Vernon Township semiwildcat, Isabella County, was reported drilling in the Dundee at more than 3,860 feet. Other outposts in Midland County include tests in half a dozen townships, increased this week when Sun Oil Co. moved in for a test in a new section, its No. 1 George Riegols, C SW SW Section 9-15n-2e, Larkin Township, Midland County. Other active wildcats include two in Jasper Township and one each in Lee, Geneva and Ingersoll Townships, respectively. The Sun well will be drilled on a block of 10,000 acres recently acquired from the Lawson Oil & Gas Co. The latter company will resume drilling operations this week on its No. 1 Atkinson, NE SW Section 21, Lincoln Township, one location southwest of the Sun-Piegols location. The Arkinson has been shut down at 995 feet.

Two Isabella County active wildcat wells include J. E. Harding's No. 1 Todd, Section 7, Broomfield Township, and Wittmer Oil & Gas Co.'s No. 1 Mogg, Isabella Township, near the recent successful No. 1 McReavy brought in by the same company as the discovery well of a prospective new pool between Leaton and Vernon Township Fields.

A 9-foot vein of coal was struck in Vester Leonard's No. 1 Shepler well, one of two wildcats drilling in Pine River Township, Gratiot County. Coal was struck at about 400 feet with drilling operations already continued to about 900 feet. Kenneth B. Montigel's No. 1 Raycraft, Section 20, same township, was drilling at more than 2,000 feet deep.

Two wildcats in Arenac County, both drilling in the upper Traverse, have failed to strike any signs of commercial production. They are: M. L. Smith's No. 1 Proul, Section 12, Au Gres Township, more than 2,200 feet deep, and Lupher Drilling Co.'s No. 1 Dudley-Lockardt, Section 25, Mason Township, about 2,000 feet deep.

Sun Oil Co. was reaming its No. 1 William O. Flemming well in Section 5, Evart Township, Osceola County, preparatory to drilling to the Dundee after a good show in the upper Traverse failed to make commercial production.

New Permits

Five new permits were issued during the week: Sun Oil Co.'s No. 1 George Piegols, C SW SW Section 9-15n-2e, Larkin Township, Midland County; George G. Hanners' No. 1 Charles W. and Harmon Hoyt, NE NE NE Section 24-13n-2w, Jasper Township, Midland County; M. D. and R. A. Wells, No. 1-B Walter Williams, NW NW NW Section 27-13n-1w, Porter Township, Midland County, and J. Mark Harvey, trustee's No. 3 Farmers State Bank, Breckenridge, SW SW SE Section 8, also Porter Township, and T. F. Caldwell's No. 1 E. Hart, NW SW NE Section 19-22n-2e, West Branch Township, Ogemaw County.

Permit No. 1,615 was canceled for Michigan Gas & Oil Co.'s No. 3-A P. J. Marthey, SW SE SE Section 19-15n-3w, Denver Township, Isabella County, and H. C. Nelson's No. 1 Viola Smith, SE NE

Complete Eleven Wells in Central Ohio; Two Reported From the Lima Field

BY GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Feb. 19.—In the Lima Field of northwestern Ohio, Keiner and others' No. 8 Louis Brandt farm, Section 34, Crane Township, Wyandot County, had an initial of 10 bbls. from the Trenton lime formation at a total depth of 1,363 feet and also a nice gas volume, but not strong enough to flow the crude to the tanks. Robert Kirk and others' test on the Joseph Coutard farm, Section 27, same township, was dry at 1,480 feet. Jones & Coyle have a rig on the Harry Bardon farm, Section 5, same township, and Upper Sandusky Oil & Gas Co. has a rig for No. 7 on the Oscar J. Weiker farm, Section 28, same township. Hanson and others are drilling at 1,320 feet on the John Culver farm, Section 28, same township, and McPheron and others are drilling No. 1 on the Cartherine Smalley farm, Section 3, same township. U. & M. Gas Co. is below 250 feet on the Dewey M. Failor farm, Section 21, same township. Jones & Coyle is below 1,457 feet on the Edith Swerline farm, Section 21, Tymochtee Township, same county.

In Sandusky County, Montgomery and others are shut down at 2,150 feet in No. 2 on the N. F. Hetrick farm, in Rice Township. C. H. Benke's test on his own farm is shut down at 1,220 feet in Section 36, Woodville Township, due to weather.

In the Tiffin Field, in Seneca County, Tiffin Industrial Gas Co. struck gas on the Frank Scherger farm, Section 32, Liberty Township, in the Clinton limestone from 385 to 500 feet, very shallow for that formation. The test made by S. H. Curry on the G. H. and M. E. Kimmett farm, Section 3, Hopewell Township, same county, also got a gas well in the Clinton formation at 610 feet. In Liberty Township, same county, R. E. Greene is drilling No. 3 on the T. C. and B. G. Shaull farm, and J. H. Murphy and others are drilling on the Andrew Kimmett farm, Section 20, same township.

CENTRAL OHIO

Eleven completions were reported from the Central Ohio Field, of which five were oil producers with an initial of 232 bbls., one dry hole and five gas wells. Pure Oil Co.'s No. 3 on the Parker Mavis farm, Section 1, Jackson Township, Knox County, showed 100 bbls. initial from 3,151 to 3,206 feet. The Preston Oil Co.'s No. 2 on the A. Van Winkle farm, Section 2, Perry Township, Coshocton County, produced an initial of 80 bbls. from 3,031 to 3,142 feet. Hulse & Kuntz, Inc., are drilling No. 2 on the Charles M. Dawson farm, Section 17, same township. In Newcastle Township, Preston Oil Co. is drilling No. 2,1536 on the R. L. Cochran farm, in the three-quarter section, and No. 3-1,537 on the William Frazee farm, same quarter section. Ira Hazlett is

(Continued on Page 80)

NE Section 36-15n-17w, Hart Township, Oceana County, was corrected.

Muskegon Field

Muskegon Development Co.'s No. 1 Charles E. Myler has been completed as a Monroe gasser in the Muskegon oil field with an open flow capacity of about 250,000 feet a day. It is near the Naph-Sol Refining Co. plant, SW SW Section 8-10n-16w, Muskegon Township, Muskegon County.

A new test of the Monroe formation in the Lakeston Township section has been started by Johnson Oil Refining Co. which will deepen its No. 5 John Thompson, a Dundee oil producer, SE SE NW Section 12-10n-17w, near the center of heaviest production. Shoup Oil & Gas Co. also is considering deepening its No. 3 George H. Shoup, across M-20 from the No. 1 Myler, from Dundee oil sands into the Monroe, about 200 feet below the Dundee.

Muskegon Oil Corp.'s No. 1 William Vandermade, SW SE Section 26-10n-15w, Egelston Township, is shut down above the upper Traverse with formations reported running about 50 feet high. The Vandermade is a new structure test in one of several blocks in Muskegon County yet to be tested by the Muskegon corporation. It was located by torsion balance tests.

Oceana Field

H. C. Nelson, of Muskegon, has moved in a rig for a new Oceana County test for a direct east offset to his No. 1 A. Doolittle, NE SE Section 36-15n-17w, Hart Township. The new well is on the property of Mrs. Cozy Ackerman, NW NW SW Section 31-15n-16w, Elbridge Township, east of the Doolittle and south of Mr. Nelson's No. 1 Myrtle Spitler. Mr. Nelson recently started operations on his No. 1 Viola Smith, SE NE NE Section 36, Hart Township, an east offset to John B. Northcott's No. 1 Jane Pindor, NW NW Section 31, Elbridge Township, already driving pipe.

James E. Flanagan is pulling tubing out of his No. 1 Clifford Garnett, SE SE Section 36, Hart Township, to drill to the Dundee after failure to develop commercial production in the upper Traverse. Mr. Nelson's No. 1 Newell, NW SE Section 36, same township, is still shut down awaiting orders. Drilling operations have been suspended in James Flanagan's No. 1 Frank Mast, NW NW Section 36, to start a new hole after striking a boulder with drive pipe.

Varner and Lockwood's No. 1 Flood in Weare Township, near Pentwater, is shut down at 2,109 feet after drilling into the Dundee without success. Burt W. Purdy and Marshall Bench's No. 1 Frank Morrison, E half SW Section 2, Hart Township, is drilling at about 1,900 feet on the way to the Dundee.

Two Oceana County wildcats, one in Otto Township and the other in Ferry Township, are proceeding slowly at 1,200 and 650 feet, respectively.

SOMETHING WAS WRONG; SICKLES WEREN'T THERE

He was a young fellow fresh from the farm, the way A. M. Butcher, salesman for the Happy Belting Co., tells the story, and he had got a job as a helper in the Empire Gas & Fuel Co.'s field warehouse in Oil Hill, Kans., in the early development of that district. The foreman set him to checking from invoices a shipment of electrical goods, including motors, switches, wire and other accessories, all for three-phase, 60-cycle, 220-volt alternating current.

After a while the new hand, wearing a troubled look, approached the foreman. "There was only three of them phases, you see," he explained, "so I was letting them go till the last; but I can't find a darned one of them 60 sickles. I don't believe they sent 'em."

Nine Completions in the Eastern Field; Renewed Activity in Lost Run Pool

BY STAFF CORRESPONDENT

PITTSBURGH, Pa., Feb. 19. — Nine wells were completed in the lower eastern fields during the week, among which were several fair gas wells and one fair producer. Six of the wells were gassers and three producers with an initial production in 45 bbls. There were also two dry holes.

There is renewed activity in Lost Run Pool, Clay district, Ritchie County, West Virginia, where work had been at a standstill due to impassable roads. Only one well is drilling, No. 5 of Elder and Louden on the S. E. Satterfield farm and which is drilling at 1,300 feet. Richards Farm Oil Co. is building a rig on the Z. Dougherty and Mary Toothman farm. Robert E. Elder has made a location on the J. W. Leonard heirs farm. Ralph Roberts and others are building a rig for No. 3 on the Sada McGinnis farm slightly east of their No. 2. Frank Finley and others have a rig on the location for No. 5 on the Biddie Fox farm.

WEST VIRGINIA

Completions in West Virginia consisted of five gas wells and there were also two dry holes. No producers were completed. The major oil companies are busy with schedules preparing to return production levels to precurtailment figures and are meeting with very fair results. In favorably situated locations some of the major companies are repressuring with gas or with air.

The best well for the week was a gas well in Roane County. On Sand Run Creek in Smithfield district, Roy L. McCulty and others, formerly reported as Ohio Valley Gas Co., completed a test on the Josephine D. Young farm in the Keener sand at a depth of 1,994 feet. It is showing for 3,000,000 feet of gas a day along with between 3 and 5 bbls. of oil.

In Boone County the Pond Fork Oil & Gas Co. completed a fair gas well in No. 16 on the Cole and Crane lease in Washington district. It was drilled in the sand at 1,475 feet and is showing for 720,000 feet a day.

In Cabell County, near the gas pool in Guyandotte district, Martin and Swanson completed a test on the Humphrey farm. It was drilled in the shale at 2,839 feet and is showing for about 600,000 feet a day.

In Calhoun County, W. H. Bickel completed a test on the Luverna Barr farm in Sherman district in the Injun sand, 1,866 feet, and it is a light gas well.

In Ritchie County, Four Point Gas Co. completed a test on the J. T. Johnson farm in Murphy district in the Injun sand at 1,940 feet. It will make a small gas well.

In Roane County, Frank Finley and others drilled a test on the W. H. Smith farm in Geary district through the Big Injun sand to 1,782 feet. All formations were dry. In Tyler County, J. H. Holmes and others drilled deeper their No. 1 on the A. H. Wells farm through the Squaw sand to 1,651 feet. It proved dry. This well had formerly been a small producer in the Cow Run sand.

Drilling in West Virginia

In Cabell County, a permit has been issued to the Penn Natural Gas Co. on the Lloyd and Lessie Adkins farm in McComas district. In this district West Virginia Gas Co. is drilling at 3,260 feet on the Halsey Hensley farm. In Barboursville district Guyan Valley Gas Co. has reached 1,130 feet on the C.&O.R.R. property. In Guyandotte district, no additional work is noted.

In Calhoun County, some new work is reported. In Sherman district, C. B. Lewis and others have completed a rig on the Malinda Kight farm. F. F. McIntosh is down 1,800 feet in No. 3 on the O. S. Bennett farm. In Lee district, this operator is drilling at 1,450 feet in No. 4 on the Mary E. Hays farm. Here, Simmons Gas Co. has reached the top of the Injun sand at 1,925 feet in a second test on the J. S. Wade farm. In Washington district, Ohio Valley Gas Co. is down 1,725 feet on the D. C. Bailey farm. In Center district, Starcher and Richards are nearing the Injun sand on the Docie Welch farm.

In Doddridge County, Murphy Oil Co. is spudding in No. 15 on the W. B. Allen farm in McClellan district. In Gilmer County, three new operations are listed. In DeKalb district, Starcher and Richards have a rig standing on the O. C. McQuain heirs farm. In the same district, Laurel Oil & Gas Co. has completed a rig on the Floyd Beall farm. C. A. Jarvis and others are building a rig on the Susan A. Gainer farm and same operators have reached 1,800 feet in a second test on the John H. Houghton farm. A. E. Ellis and others have completed a rig for No. 3 on the Ware and Webster lease. In Center district only one well is drilling. L. P. Bickel is down 2,150 feet on the Mary A. Stump farm which is being drilled to the Berea sand.

In Boone County, Pure Oil Co. is cleaning out its No. 259 on the Williams Coal Co. tract in Sherman district after a shot. The total depth was 3,251 feet. Its No. 63 on the Federal Coal Co. tract, same district, is drilling at 1,976 feet and its No. 64, same lease, at 2,725 feet.

In Kanawha County the Columbian Carbon Co. is shut down at 1,883 feet in No. 12 on the Queen Land Co. lease in Big Sandy district and is testing the gas in the Keener sand. Holly H. Osborne is drilling No. 4 on the Goshorn and other lease in the same district. In Elk district, there is no additional report of the test by the Valley Gas Co. on the G. W. Harless farm.

In Marshall County, Guy B. and A. B. Patterson are rigging up to drill No. 3 on the C. and A. B. Williams lease in Liberty district. In Wetzel County, the Wiser Oil Co. is down 2,125 feet on the Mary E. Yoho farm in Proctor district.

In Pleasants County, Dinsmoor & Co. are drilling at 780 feet on the Meredith Nichols farm in McKim district. In the same district, Ross Boner and others reached 1,025 feet on the Daniel Locke farm and shut down.

In Roane County C. C. Cleavenger and others are drilling No. 3 on the Mary L. Taylor farm in Geary district. The depth is 720 feet. In this district, Godfrey L. Cabot is down 1,460 feet in a second test on the G. W. Truman farm. In Curtis district, W. B. Heeter is drilling at 1,550 feet on the Maude Knopp and others farm. In Spencer district, D. S. Fisher and others have reached 1,935 feet in a second test on the Stella V. Knotts farm and George E. Smith is down 640 feet on the L. A. Short farm.

SOUTHWEST PENNSYLVANIA

There was only one completion in Southwest Pennsylvania and it was a fair producer. In Amwell Township, Washington County, the Manufacturers Light & Heat Co. completed a test on the C. A. Miles farm at a total depth of 2,973 feet. The top of the Fifth sand was at 2,953 feet and oil was struck at 2,961 feet. The oil rose 700 feet in the 6¼-inch casing in eight hours and has the appearance of a 30-bbl. well. The well offsets the test on the C. Le. Morton farm by the Carnegie Natural Gas Co. which has been a fair producer in the same formation. This test is on the line of other producers in the pool.

In this township, Carnegie Natural Gas Co. is drilling at 2,590 feet on the C. W. Dunn farm and has reached 2,668 feet in drilling deeper its test on the Fred Baumberger farm. Wise Oil & Gas Co. is down 2,320 feet on the Eliza Roach farm.

In East Findley Township, the Clutter and Sproul wells are still producing considerable oil, the former still averaging in excess of 100 bbls. a day. No. 3 of the Natural Gas Co. of West Virginia on the Sarah Carter farm is drilling at 1,749 feet. There was a showing of about 90,000 feet of gas a day in the Maxon sand at 1,700 feet. The top of this structure was at 1,694 feet. Its No. 1 on this farm, drilled deeper after the Clutter well came in, reached a depth of 2,867 feet and found no Fifth sand. The Gordon Stray had been dry. North of the Sproul well, a new test is starting. C. P. Levier and others are building a rig on the James Marshall heirs farm. Natural Gas Co. of West Virginia has reached 710 feet on the Harley Ealy farm. 1 mile south of East Findley. Myers, Hoskinson and others are drilling deeper No. 2 on the Clutter farm, and the depth is 2,772 feet.

In South Franklin Township, Washington County, Manufacturers Light & Heat Co. has started drilling No. 2 on the Howard Clarke farm and reached 400 feet. In the same township, Frank K. Fawcett and others are fishing at 1,482 feet on the Frank Caton farm.

East of the Fifth sand line of producers, Amwell Township, Washington County, Carnegie Natural Gas Co.

Reflection Seismic Surveys

Successfully Conducted in

GSI TRADE MARK

ROCKY MOUNTAIN: Montana, Wyoming, Colorado, New Mexico. **Mid-Continent:** Kansas, Oklahoma, Texas. **Gulf Coast:** Texas, Louisiana, Alabama. **North Central:** Michigan. **Pacific Coast:** California. **Appalachian:** New York, Pennsylvania. **Canada:** Alberta, Saskatchewan, Quebec. **Mexico:** Tuxpam Area, Isthmus of Tehuantepec, Northern Tamaulipas.

GEOPHYSICAL SERVICE

(Incorporated)

Republic Bank Bldg., Dallas, Texas

J. C. Karcher Eugene McDermott

reached a total depth of 3,152 feet on the John C. Murphy farm and found the Fifth sand dry. The Gordon Stray sand, which showed 149,000 feet of gas, will be shot and tested. Raymond Orrill and others have a rig standing for No. 3 on the G. L. Walker farm.

In Greene County, Fred Garrison is drilling on the G. W. Eberle farm in Dunkard Township. It is 430 feet deep and the Pittsburgh Coal was at 220 feet.

In North Versailles Township, Allegheny County, McVey and others have reached a depth of 1,300 feet on the James Shaw farm.

SOUTHEAST OHIO

Few wells were reported from Southeast Ohio. In Jefferson County, Altamount Oil Co. completed a second test on the Steubenville & Wheeling Traction Co. lease in Steubenville Township, the SW Section 28. It was drilled in the Berea sand at 1,550 feet and is showing for 5 bbls. a day after shot.

In Medina County, E. R. Edson & Son Co. completed No. 41 on the Ed G. Miller farm, Tract 15, Lot 12, Chatham Township. It was drilled in the Berea grit at 477 feet and produced 10 bbls. the first day after shot.

In Monroe County, C. E. English and others completed a test on the Harvey Jones farm in Section 17, Washington Township. It is a small gas well, gauging 80,000 feet a day, in the Berea grit at 1,932 feet.

Central West Fields

(Continued from Page 78)

drilling on the Glen Meek farm, Section 1, Washington Township.

In Medina County, Oko Oil & Gas Co.'s No. 60 on the Henry Essig farm, in Lots 2 and 3 Chatham Township, had a 5-bbl. initial production at 388 feet, while Curtis & Eaken's No. 12 on the Tom Brown, Jr., farm, Lot 22, same township, was dry at 370 feet.

In Lorain County, McMillan and others are drilling on the Merl Penfound farm, Lot 9, Carlisle Township.

In Holmes County, Hardy Township, Preston Oil Co.'s No. 3 on the Phil Collier farm, Lot 19, is a gas well at 3,664 feet. East Ohio Gas Co. is drilling No. 7 S. H. Sterling farm, Lot 27, same township, and Kenova Oil & Gas Co. has a rig for No. 3 on the Mary A. Beeler farm, Lot 20, same township.

In Licking County, G. A. Upham's No. 2 on the C. M. Babcock farm, in NE Section 17, Fallsburg Township, produced 35 bbls. initial at 3,037 feet.

In Muskingum County, Brush Creek Township, Fritz Oil & Gas Co.'s test on the Ora Wexler farm, Section 22, is a gas well at 2,957 feet.

In Ashland County, Moore and others' No. 7 on the George W. Black farm, Lot 34, Mohican Township, produced 12 bbls. initial from 802 to 851 feet.

In Cuyahoga County, Hulse and others are drilling No. 1 on the Emma Jamer farm, Section 28, Olmstead Township, from the Newburg sand to the Clinton lime formation.

Athens County

In Athens County, Robinson Brothers' test on the Alvin D. Cline farm, Section 13, Lee Township, is a gas well at 1,243 feet. C. and M. Oil & Gas Co. is drilling No. 3 on the Charles Cole farm, Section 35, Troy Township.

In Tuscarawas County, J. H. Harper has a fishing job on Oscar Kohler farm, Section 22, Jefferson Township, and in Fairfield Township, Ober Miller and others are reported drilling around 4,525 feet in No. 1 on the E. E. Schwartz farm, Section 4.

In Stark County, Ohio Fuel Gas Co. is drilling No. 2 on the Gertrude Marchand farm, Section 11, Jackson Township. In Plain Township, Cunningham Natural Gas Co.'s No. 1 on the Catharine Donnenworth farm, Section 22, same township, is a gas well at from 4,559-87 feet. Brendel Producing Co. is drilling No. 2 Emos R. Methie farm, Section 8, same township, and has made a location on the Charles Warstler farm, Section 14, same section.

In Belmont County, E. D. Crough and others are drilling on the Boyd-Majors farm, Section 21, Kirkwood Township.

In Guernsey County, Jewell & Hammond made a location on the Frank L. Thompson farm, Section 13, Richland Township. East Ohio Gas Co. made a location for No. 1 on the Gadd-Little farm, Section 1, Wheeling Township. Muhlback & Son, made a location on the Mary C. Jenkins and others farm, Section 11, Jefferson Township. Ferguson & McCullough are drilling No. 2 on the Thomas Stewart farm, Section 21, Willis Township. Ohio Fuel Gas Co. is drilling No. 1 on the John Johnson farm, Section 20, and has a location for No. 2 same farm. Jewell & Muhlback made a location on the Jessie Milhone farm, Section 5, Monroe Township.

Cashdollar and others are drilling on the Charles Vanderfor farm, Section 2, Elk Township, Vinton County. Kachelmacher estate is drilling No. 3 on the Lafayette Eggleston farm, Section 20, Brown Township. R. J. Henry and others are drilling on the John C. Sampson farm, Section 20, Elk Township.

There were no completions reported from Kentucky and Illinois for the week.

GASOLINE PRODUCTS SUIT

A suit alleging infringement of cracking patents and involving the operation of a cracking plant has been brought by Gasoline Products Co. against National Refining Co. The suit which has just been filed in the U. S. District Court for the Northern District of Ohio, alleges infringement of three patents, specifically the following: Rosenbaum, No. 1,324,983; Cross, No. 1,734,079, and Howard and Loomis, No. 1,869,337. The cracking plant in question, said to be a Winkler-Koch unit, is located at the plant of the National Refining Co., at Findlay, Ohio.

R. W. CUMMINS DIES

PITTSBURGH, Pa., Feb. 17.—Robert W. Cummins, aged 80, widely known oil attorney, died at his residence in Edgewood. Mr. Cummins became counsel for the Forest Oil Co. in Pittsburgh in 1889, and in 1901, when the Forest company was merged with the South Penn Oil Co. he became chief counsel of the merged interests. In 1902, he was elected secretary of the company and continued until 1925. In 1903, he was chosen a director. He also held offices in the Hazelwood Oil Co. and the Penn Mex Fuel Co., while those companies were affiliated with the South Penn Oil Co.

Oklahoma Fields

(Continued from Page 71)

H. L. Jolly's No. 2 Spaulding, NE SE SE NE Section 8-15-18, Muskogee County, was dry and abandoned at 1,720 feet.

Pringle and others' No. 1 Doyle, NE NW NE Section 25-14-11, Okmulgee County, had Wilcox sand at 2,764-68 feet. It swabbed and flowed 40 bbls. in 24 hours and was completed.

Colton and Phillips Petroleum Co.'s No. 2 Ragsdale, NE SW SE Section 30-14-12, was shot with 60 quarts in sand at 2,833-43 feet. It swabbed 12 bbls. of oil and 30 bbls. of water.

Fred Miller's No. 1-A Byrd, NE cor. SE Section 25-12-13, is an 8-bbl. well at 1,289-99 feet.

Harmon Brothers were drilling at 260 feet in No. 1 Harjo, CSL NE SE Section 6-15-12. Texas Co. spudded No. 4 Asbury, CEL SE SE Section 8-15-14. R. E. Godfrey was drilling at 1,176 feet in No. 1 McNac, SE SW SW Section 13-15-17. J. S. Roett and others' No. 1 Grayson, SE NE SW Section 20-14-12, was rigging up. Riddle & Rorabaugh were drilling at 1,130 feet in No. 7 Rentie, SE NE NE Section 11-14-14. Keeney Brothers' No. 1-A Berry, SW cor. SE Section 3-13-16, was drilling at 1,125 feet. Robinson Oil Co.'s No. 1-A Jackson, SE cor. SW Section 8-13-16, was drilling at 1,600 feet. Eagle-Picher Co., deepening No. 2 Burgess, NE SE SW Section 26-12-12, set pipe at 2,435 feet and the crew was cleaning out.

In Pittsburg County, the Mid Western Oil & Gas Co.'s No. 1-C Shelton, CSL SE NW Section 7-7-18, was spudding and the same company's No. 1 Garis, C SE NW Section 8-7-18, was drilling at 385 feet.

Southern Fields

Jones and others have machine in for No. 1-A Brown, NE cor. SE Section 29-2n-9w, Stephens County. George Pace and others have cellar dug and pits ready for No. 1 Siever, SE NW Section 4-1n-7w, Stephens County, a 3,250-foot test.

Harvey & Stone's No. 1 Penneston, SE NW SE Section 17-7s-5w, Jefferson County, was dry and abandoned at 819 feet, in shale.

Centrop Oil Co. was drilling in No. 1 Jinkins, 220 feet from the north line and 735 feet from the east line, NE Section 25-7s-5e, Marshall County. J. A. Godfrey's No. 1 Messenberg, NE cor. SE Section 26-7-5e, was drilling at 130 feet.

Jones Brothers and others were rigging up No. 2 Toney, SW NW NE SW Section 27-2s-7w, Stephens County.

In Carter County, Walter Neustadt's No. 3 fee, SE NE SW SW Section 3-1s-3w, Tatums Field, is a 31-bbl. pumper from sand at 2,728-90 feet. It was completed.

Amos Drilling Co. has made a location for No. 2 Mitchell, C SW SE NW Section 19-1s-2w, Carter County.

Charles H. Sheasley Found Dead in Office

FRANKLIN, Pa., Feb. 19.—Charles H. Sheasley, aged 70 years, was found dead with a bullet wound in his body in the office of the Franklin Valveless Engine Co., of which he was president. Coroner Zerbe decided that the wound was self-inflicted with suicidal intent and declared no inquest necessary.

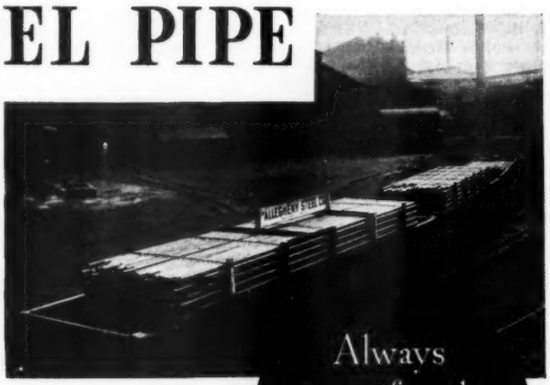
Mr. Sheasley had not been in good health for some time past.

Charles H. Sheasley played an important part in the business and industrial life of this section of the state and was especially well known for his connection with the oil industry as a producer and a manufacturer of oil field equipment.

He was president of the Franklin Valveless Engine Co., the products of which are known wherever oil is produced. The company was formerly the Producers Supply Co. and manufactures and deals in working barrels, engines, boilers, pipe, packers, powers and tanks. Mr. Sheasley invented the famous Sheasley packer.

ALLEGHENY STEELS IN THE PETROLEUM INDUSTRY

ALLEGHENY STEEL PIPE



Always a uniformly high quality product

100 per cent control of every manufacturing operation from the open hearth to the finished product, enables ALLEGHENY to produce a consistently high quality product that has more than kept pace with the continually changing service requirements of modern drilling and pipe line construction.

Warehouse stocks are located at strategic points for quick delivery—all shipments wire traced through to destination.

ALLEGHENY STEEL

COMPANY . . . BRACKENRIDGE . . . PENNA.

Sales Offices and Warehouse Stocks in the Principal Cities

ALLEGHENY PRODUCTS.—SHEETS for Automobile Bodies, Metallic Furniture, Deep Drawing ALLEGHENY METAL . . . ALLEGHENY ALLOYS . . . ELECTRICAL SHEETS . . . STEEL CASTINGS . . . SEAMLESS TUBING . . . BOILER TUBES . . . PIPE

TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Burning Quality of Kerosene Related to Lamp and Wick

Will you tell me why kerosene when used in the ordinary every day lamp goes out or the flame goes down when the bowl is half full or less? The kerosene has: Gravity 44, initial boiling point 370°F., 10 per cent over at 428°, 50 per cent at 474, end point 530°.—H. H. S.

So far as the information goes, the kerosene described appears to be of good grade. Any difficulty with the burning of this oil may be due to the lamp or to the wick. The American Society for Testing Materials Report by Committee D-2, The Significance of Tests of Petroleum Products, page 31, discussing the tests for illuminating oils states:

"None of the burning test methods mentioned gives results that can be reported adequately in numerical terms. Their real usefulness lies in the fact that they prescribe efficient procedure for comparing the quality of different samples or grades of oil, particularly with respect to details of behavior. The subject of interpreting results of burning tests cannot be discussed adequately in writing, and, as a matter of fact, there is no substitute for actual experience. It is relatively easy to tell a very good from a very bad oil, but this question rarely comes up; the usual need is for information as to whether an oil is slightly better or worse than standard, and to supply this information, it is necessary to rely on the observations of a skilled operator and to interpret them in terms of what is known of the service requirements of the products.

"The most important features are shape and size of the flame. Oils are occasionally encountered which have a viscosity so low that flame size increases, or so high that it decreases, during the period of burning. Generally, however, changes in flame size or shape are due to changes in that portion of the wick which feeds the flame. An incrustation always forms on the wick, and is not objectionable unless it affects the flame. Some types of wick crust are 'bushy' and increase flame size; others tend to enclose the surface of the wick and cause flame shrinkage. The worst feature, however, is an irregular deposit, sometimes localized through the formation of mushrooms ('ears,' 'niggers,' 'toadstools') which produces distortion. A distorted flame usually generates smoke which, from the point of view of the user, is the worst thing that can happen."

Production of Gasoline in United States Years 1932 and 1933

I should like to know, if it is possible for you to state, what was the quantity of gasoline produced in the United States last year.—W. I. C.

The U. S. Bureau of Mines publishes each year the statistics covering the operation of refineries. From this information the data are arranged by the Western Petroleum Refiners Association. The information following is from a recent report of the association.

GASOLINE PRODUCTION
(Barrels)

	Year	
	1932	1933
Output	392,623,000	401,949,000
Shipments	393,646,000	403,683,000
Stocks held	31,329,000	29,595,000
Supply, days	29	27

These data show increases of 2.4 per cent in output and 2.5 per cent in shipments, but a decrease of 5.5 per cent in the volume of stocks of gasoline held at refineries.

Permissible Quantity of Hydrogen Sulphide in Natural Gas

What is considered to be the highest percentage of hydrogen sulphide that may be permitted to be contained in natural gas for delivery through pipe lines for distribution in cities? What are the chief reasons for limiting hydrogen sulphide in gas?—G. N. R.

An examination of the literature available does not reveal any regulations covering the hydrogen sulphide content of natural gas which is to be used for domestic purposes. It has been the practice in many cities to enforce regulations covering the quality of manufactured gas, among which is a limiting specification for hydrogen sulphide. Some cities stipulate that the manufactured gas shall not contain any hydrogen sulphide, when tested by the lead acetate paper test, others permit varying quantities but the largest quantity allowed is 30 grains per 100 cubic feet; this is equivalent to approximately 0.05 per cent by volume.

The city regulations are concerned with the action of hydrogen sulphide as a poisonous substance, its objectionable odor, the tarnishing of silverware, and its tendency to cause corrosion of metals. There is very little natural gas sold direct from the wells. The larger part delivered to pipe lines is first treated for the gasoline content and in the process of extracting this it is necessary to treat the gas for the removal of hydrogen sulphide. Consequently, pipe line natural gas is usually free from hydrogen sulphide.

A recent publication of the U. S. Bureau of Mines, Technical Paper 560, by J. M. Devine, C. J. Wilhelm, and L. Schmidt, Corrosion of Steel by Gases Containing Traces of Hydrogen Sulphide, Effect of Pressure and Moisture Conditions, directs attention to the corrosive action of natural gas which contains very minute quantities of hydrogen sulphide. This publication contains also the tentative method for the analytical determination of hydrogen sulphide by the silver sulphate absorption method, based on the work of Borgstrom and Reid on mercaptans.

The results of this investigation may be summarized as follows:

"Traces of hydrogen sulphide in a gas may cause severe corrosion if oxygen and water are present. Modified gaseous corrosion in which precipitated water is present in the surface of the metal is much more severe than ordinary gaseous corrosion in which no precipitated water is present on the surface of the metal, although the gas may be saturated with water vapor. Pressure accelerates the action in both forms of corrosion, but this effect is particularly noticeable in modified gaseous corrosion.

"In natural gas pipe line systems, modified gaseous corrosion is the chief consideration in combating corrosion caused by gas containing traces of hydrogen sulphide. Steps that may be taken to reduce corrosion losses in pipe line systems include: (1) Removal of hydrogen sulphide from the gas, (2) reduction of oxygen content of the gas, and (3) control of humidity condition."

Electrical Properties Control the Stability of Petroleum Oils

Will you please inform me what are the pH numbers, resistance, and inductive capacities of the various petroleum oils?—O. H.

Normal petroleum is neutral; hence, hydrogen ions are absent. If hydrogen ions were present in petroleum, the oil would be highly corrosive.

Resistance, commonly called dielectric strength, the opposite of conductivity, is a property of particular importance for certain grades of lubricating oils. It is the capacity that any substance may have to stop the flow of electricity, especially sparks, from one place to another. This property is of major importance when judging transformer and switch oils. Small traces of water or suspended solids lower the resistance. An oil was found, by Tobey, Electrician, 66, 491, 1911, to resist 35,000 volts when dry but upon the addition of 0.05 per cent water broke down at 23,000 volts. Gruse gives in Petroleum and Its Products, page 90, the data of Winkelmann covering the dielectric constants of petroleum fractions as shown in the table.

DIELECTRIC CONSTANTS OF PETROLEUM FRACTIONS

Hexane	1.864
Octane	1.929
Decane	1.967
Petroleum ether	1.779
Kerosene	1.92 to 2.26
Lub oil	2.13

These values are very low, on the same basis, water is 76. The values by Holde of the specific conductivity for the light fractions, specific gravity 0.695-0.705 or A.P.I. 72.1-69.2, were $2\text{-}4 \times 10^{13}$. For fractions 0.67-0.71, or A.P.I. 79.7-68.8 the measurements were $1.1\text{-}1.8 \times 10^{14}$. Lubrication oil was 10^{12}. Gurwitsch-Moore, Petroleum Technology, page 223, gives the resistances of transformer oils at 20° C. as the equivalent of 1.5 to 2.3 10^6 megohm per 1 cm., which corresponds to a conductivity of 4 to 6.10^{13}.

The charging of a liquid or solid with electricity may be called electrification, electric excitability or induction. It is of importance in the petroleum industry in relation to fires and explosions, especially when handling the light products. These, when dry, possess the power to hold electric charges. The electricity is produced by the free flow into the receiver. As wool or silk under friction will store electricity, charges of electricity will be absorbed by gasoline when dry wool or silk is moved about in it. When the material is removed a spark may pass between the fabric, the hands or some object and ignite the gasoline.

Several investigators have shown that gasoline, the naphthas and kerosene may build up a high tension from the friction caused by the liquid moving through pipe. Holde measured voltages up to 4,000. He observed that the pipe metal influenced maximum voltage as follows:

ELECTRIFICATION

Metal—	Volts
Iron	4,000
Brass	3,500
Aluminum	2,900
Copper	2,000

Prevention measures include grounding of tanks and pipes; introduction of water when possible; maintaining atmosphere of steam or water above the liquid; and for some oils, the addition of magnesium and lead soaps for raising the conductivity.

The fire prevention committee of the American Petroleum Institute has presented reports and papers on static electricity. See especially reports sixth and seventh annual meetings 1926. Accumulations in excess of 10,000 volts are reported.

Grading of Lubricating Greases Basis A.S.T.M. Penetrations

I am anxious to find out the generally accepted or standard A.S.T.M. penetrations using a grease cone at 77°F. for greases from No. 00, No. 0, No. 1, No. 2, No. 3, etc. For instance, is 285 penetration within the range for a No. 2 cup grease?A. F. R.

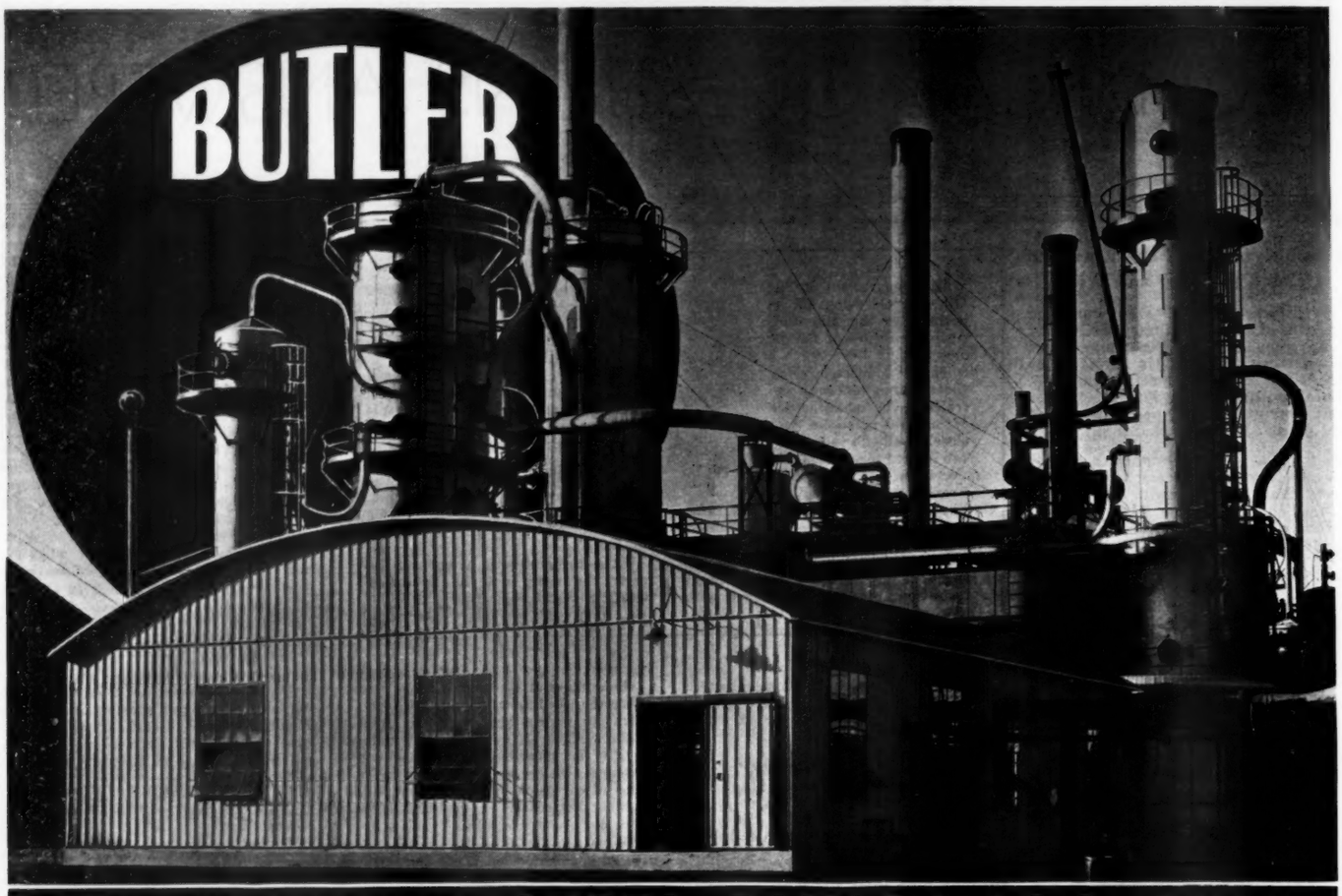
Klemgard, in Lubricating Greases, Page 62, gives the A.S.T.M. consistencies of the usual grades of cup greases, as shown in the table.

Grade	A.S.T.M. penetration, mm.
0	350
½	325
1	300
1½	275
2	250
2½	225
3	200
3½	175
4	150
5	125
6	100

This author gives the melting point of various grades of cup greases containing different quantities of soap, on Page 64, as follows:

Grade	M. P. °F.
1	130-140
2	145-150
3	170-185
4	185-190
5	195-210

According to the classification given, a grease having a penetration of 285 mm. should be placed in the 1½ grade.



READY-MADE STEEL BUILDINGS SAVE

THEY save as much as 30% to 70% under other non-combustible types of structures. Their first cost is low—little if any more than wood frame structures sheathed in corrugated iron.

Butler Ready-Made Steel Buildings save in many other ways. They save time and labor. Their standardized unit construction makes possible both—quick delivery of complete material—speedy erection with any handy type of labor. They save weight. Into them is formed the greatest strength per pound of weight. They save space—make maximum floor space usable. Fire-safe, they save insurance—reduce the general fire hazard. They save in upkeep and depreciation. They are durable, inexpensive to maintain. Butler Ready-Made Steel Buildings are of the most permanent type—yet have 100% salvage value. They are quickly taken down, moved, re-erected and enlarged at any time.

Butler Ready-Made Steel Buildings are the standard of oil industry structures. They are particularly adapted to out-post sheltering of refineries, casing head plants, power plants, field and pipeline pumping units, tools, warehouse stocks, motor cars and trucks, field offices, field workers, bulk depots and filling stations.

Given the size and type of structure you require, Butler engineers will serve you better from every standpoint. Or see a Butler Steel Building and Bolted Tank field distributor first.

BUTLER MANUFACTURING COMPANY

1244 Eastern Ave., Kansas City, Mo. 944 Sixth Ave., S. E., Minneapolis, Minn.

NATURAL GAS DEVELOPMENTS

Bill in Texas Legislature to Curb Waste of Gas

AUSTIN, Tex., Feb. 19.—Wastage of natural gas in the Texas Panhandle of more than 1,000,000,000 feet a day, sufficient to supply the domestic needs of the whole State for an entire year, is charged in a bill presented to Governor Miram A. Ferguson by Representative R. Van Zandt, of Tioga, who asked for immediate legislation to stop what he termed the "most appalling waste of a natural resource in the country." He requested the governor to submit the bill at this session, urging that the legislature investigate the entire matter and declaring that this "fuel is being blown into the air and forever lost" with the result that the fuel supply of the homes of Texas is placed in jeopardy.

This measure refers to the wastage as "wanton extravagance" and a "ruthless drainage which will deplete and destroy this great field in a few short years," and explains that the condition is the result of passage of an act by the last legislature permitting gas to be blown into the air after the gasoline has been extracted. Prior to passage of this act, natural gas could not be used for gasoline extraction unless the residue could be used for commercial lighting, heating or power.

Representative Van Zandt's bill provided that where the owner of a gas well has no reasonable market for the gas for light or fuel he may extract the gasoline content only if the residue is returned to the oil and gas-bearing stratum. The measure declares the conserving of natural gas to be a part of the conservation policy of the state and provides that the act become effective immediately after its passage because of the emergency.

Mr. Van Zandt stated that landowners in the Panhandle whose lands are being drained of gas by near-by gasoline extraction plants have formed an association and are asking for protection for their property.

The bill states that loss of 1,000,000,000 feet of gas a day is equivalent to $12,000,000 worth of coal and approximately 30,000,000 bbls. of oil. In attempting to give an idea of the amount of wastage, Mr. Van Zandt said engineers had figured that 1,000,000,000 feet of gas would fill the hall of the House of Representatives and the Senate Chamber here in Austin more than 1,500 times. It would require, he explained, a tank 1,000 feet long, high and wide to hold that much gas.

In addition to the loss of gas, he said, that at least 400,000,000 bbls. of oil will be lost because it cannot be recovered without gas pressure. For every 6 cents recovered in gasoline, he said, at least the equivalent of 94 cents in fuel is thrown away.

The preamble of the bill explains that the situation "is forcing land and lease owners to construct gasoline plants at an unparalled rate in order to prevent wasteful drainage from their own property by reason of the equally unwise and wasteful drainage of gas from adjoining properties."

Mr. Van Zandt has bene active in fostering conservation measures in the legislature.

LLOYDMINSTER GAS PROJECT

LLOYDMINSTER, Saskatchewan, Feb. 17.—Following the striking of a gas flow in Lloydminster Gas Co.'s No. 1 wildcat a mile north of here, in LSD 6, Section 11-50-28w3, arrangements are being made to market the gas to Lloydminster. A company is being organized with O. C. Yates as president and a franchise by-law is now before the town council. The tentative arrangement between the town and the company calls for drilling operations until a flow of 2,000,000 feet a day is reached. Unofficial estimates place the production of No. 1 at 1,000,000 feet a day, with 400 pounds rock pressure. Production was encountered unexpectedly at 1,380 feet, and drilling may be continued to 1,800 feet, where larger production is looked for.

Mr. Hockenbeamer Refutes Power Commission Report

SAN FRANCISCO, Calif., Feb. 19.—A. F. Hockenbeamer, president of the Pacific Gas & Electric Co., challenged the report credited to the Federal Power Commission which said he got a $134,800 salary in 1928.

"What I actually received was $50,000," Mr. Hockenbeamer said. "And there was no bonus. There have been no bonuses in this company.

"Since 1927 the company has saved $270,000 a year in executive salaries due to various consolidations.

"We took in the Great Western Power Co. of California, the San Joaquin Light & Power Corp., the Modesto Gas Co., the Snow Mountain Water & Power Co., the Tuolumne County Electric Light & Power Co., and the Novato Utilities Co., abolishing their executive posts and consolidating them in my office. The duties previously performed by the presidents of these acquired companies were assumed by me without any compensation except such as I received as president of the Pacific Gas & Electric Co.

"I received $50,000 in 1928 and 1929, $62,500 in 1930, $75,000 in 1931, $72,777 in 1932, and on June 30, last year, my salary was at the rate of $67,500." The Power Commission's figures were $134,800 in 1928, $130,520 in 1929, $103,850 in 1930, $75,000 in 1931, and $72,777 in 1932. Mr. Hockenbeamer said the Power Commission figures apparently were reached by adding the savings in executive salaries for the various years to what he actually received.

ASKS FOR RECEIVER

INDEPENDENCE, Kans., Feb. 19.—F. E. Wharton, Independence, trustee for bondholders of the Commercial Gas Pipe Line Co., with headquarters here, filed suit in District Court seeking the foreclosure of a mortgage trust deed, contending $25,000 was due and unpaid on 25 bonds of the company.

Wharton also asked that a receiver be appointed, alleging the company was mismanaged. In his suit, Wharton said the company's pipe lines pass through Bourbon, Allen, Linn and Anderson Counties, and the company has property in those counties covered by the mortgage, including pipe lines, meters, meter houses and real estate.

PEOPLES GAS RATE ACTION

CHICAGO, Feb. 19.—Hearings before the Illinois Commerce Commission as to alleged discrimination against coal operators in Illinois resulting from low rates charged large industrial gas consumers by the Peoples Gas Light & Coke Co. have been continued until February 24.

TAX ON GAS DEFEATED

AUSTIN, Tex., Feb. 19.—The Texas House refused to print on minority report a bill to levy a tax of three-fourths of 1 cent per 1,000 feet on natural gas producers. The motion was defeated without a record vote.

Code for Carbon Black Signed by Gen. Johnson

WASHINGTON, D. C., Feb. 17.—General Johnson has signed the carbon black code, to become effective February 19.

The codes give the governing authority power to decide upon increases in plant capacity of the industry in any given region at any time such action is considered advisable, subject to the approval of the administrator. This power was provided "in the interests of economical use of natural gas and the orderly development of the carbon black industry, NRA officials said.

Work hours are limited to 40 a week in any six-week period, to 48 hours in any one week, and to eight hours in any one day. Minimum wages for common labor are 40 cents an hour in Louisiana, 50 cents an hour in Oklahoma and Stephens County, Texas, and 55 cents an hour elsewhere. A minimum of 40 cents an hour is provided for office workers.

NRA stated that the industry is composed of approximately two dozen concerns having a $40,000,000 investment as of 1933 and employing approximately 1,300 men.

Rate Investigation on Rio Grande Valley Co.

EDINBURG, Tex., Feb. 17.—Following insistence of Mayor E. A. Brown of Edinburg that the gas utilities division of the State Railroad Commission investigate rates of the Rio Grande Valley Gas Co., which serves Valley cities, Powell Baker of the gas division arrived here, conferred with Mayor Brown and went to Brownsville to make plans for the appraisal. His work will follow completion of an audit made in December by Layton Stanberry, auditor of the commission's gas utilities division, of the company's books.

Mayor Brown said the audit and appraisal will determine a fair rate for gas delivered to the city limits and will therefore enable Valley municipalities to determine the fair rate charged in each city. In each city the cost of the distribution system and other factors will enter into the rate charged consumers.

COSTS OF TEST CASE

CALGARY, Alberta, Feb. 17.—The Alberta Court of Appeals on reference from the Supreme Court of Canada has ruled that each party should pay its own costs in the test case instituted by Spooner Oils, Ltd., against the Turner Valley Gas Conservation Board for the purpose of testing the validity of the Turner Valley Gas Conservation Act. In the appeal to the Supreme Court, the Spooner company succeeded in two points and the conservation board in two.

TO TAX GAS LINES

AUSTIN, Tex., Feb. 19.—The House committee on revenue and taxation favorably reported a bill placing gas pipe lines under the intangible assets tax law.

CANADIAN GAS PRODUCTION

OTTAWA, Canada, Feb. 10.—Revised figures of natural gas production from all Canadian fields for 1933 show a total of 23,202,567,000 feet compared with preliminary estimates of 22,812,640,000 feet and an actual total in 1932 of 23,420,174,000 feet. While production in the first five months of 1933 showed a decline, gains in the months since then almost offset this.

Natural gas production from all Canadian fields in December, 1933, totaled 2,990,544,000 feet, against 2,141,597,000 feet in November and 2,612,674,000 feet in December, 1932.

Imports of mixed (natural and artificial) gas into Canada in December totaled 10,132,000 feet appraised at $6,574, against 9,242,000 feet valued at $6,807 in November.

Utility Rate Bill Passed, Prevents Delays in Court

WASHINGTON, D. C., Feb. 19.—The Senate has passed the Johnson bill, designed to prevent public utility companies from delaying rate decisions through the Federal courts.

The Senate's action on the Johnson bill, which has been in Congress for two years without previously reaching the Senate floor, was taken without a record vote.

It represented a victory for Senator Johnson (Rep., Calif.) and Senator Norris (Rep., Neb.) in their efforts to eliminate or decrease the possibilities of delay now open to utility corporations in appealing from rates fixed by state regulatory bodies.

The bill, which now goes to the House, provides that no district Federal court shall have jurisdiction of any suit to enjoin, suspend or restrain the enforcement, operation or execution of any order of an administrative board or commission of a state, or to enjoin, suspend or restrain any action in compliance with any such order where jurisdiction is based solely upon the ground of diversity of citizenship, or the repugnance of such an order to the constitution, and where the order affects rates chargeable by a public utility.

MINNEAPOLIS RATE CASE

A temporary injunction has been issued by the Federal District Court in Minneapolis against the order of the city council reducing natural gas rates 19.4 per cent. The Minneapolis Gas Light Co. states that such reduction would reduce the earnings of the company to 1.7 per cent on the valuation claimed by the city. J. W. Schmidt of Anoka, Minn., said to be a gas promoter, has suggested the organization of a natural gas association to co-operate with the people of Minneapolis to demand the use of Montana natural gas and construction of a natural gas pipe line.

WINONA, MISS., GAS FRANCHISE

At a meeting of the board of aldermen in Winona, Miss., a 25-year franchise was given to the Independent Utilities Corp. for supplying natural or manufactured gas to the city and for operating pipe lines through the city. J. B. Herring, president of the corporation, presented the proposal that was accepted by the board.

KANSAS RATE LEGISLATION

The Kansas State Legisiature has been asked by the governor to appropriate $50,000 so that the Corporation Commission might continue the gas rate litigation, now in the U. S. Supreme Court, and also to carry on other utility rate investigations. The senate ways and means committee has introduced a measure making the appropriation.

LACLEDE GAS ASKS EXTENSION

ST. LOUIS, Mo., Feb. 17.—The Laclede Gas Light Co. has filed with the Public Service Commission of Missouri a petition for an order authorizing extension of $10,000,000 of its refunding mortgage 5 per cent bonds from April 1, 1934, to April 1, 1939.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

Owners of Oil Pool Are Owners of Its Reservoir Energy Too

I am much interested in the subject of unit operation of oil fields and questions allied to it, and I am reading everything about them that comes to my attention. A question which seems pertinent concerns the energy by means of which the oil is forced to the surface. There is wide and interesting discussion regarding the ownership of the underground oil—that is, whether it is common property of the landowners or belongs to the man who can get it to the surface first—but what about ownership of the energy that drives the oil? Isn't that something that ought to be settled too?—E. N. D.

The point you raise has been a subject of discussion among petroleum engineers and oil company attorneys, although relatively little has been published. The subjoined answer to your question is provided by W. P. Z. German, general attorney of the Skelly Oil Co., who has made an exhaustive study of this whole subject.

"The question as to the ownership of reservoir energy in an oil pool is a very interesting one. There is an inseparable connection between the right to take the oil and gas and reduce them to possession on the surface and the right to use reservoir energy in doing so. This energy is an invisible, intangible force or power present in the formation which confines the oil and its accompanying gas; it is imprisoned by the same physical barriers which hold the oil and gas, and its efficient functioning is attained by a control of the movement of the oil, gas and the underlying or adjacent water.

"However, it is unlike either the oil or gas in that it cannot be reduced to possession and saved on the surface, and in that its value lies solely in its usefulness in recovering and reducing the oil, and to some extent the gas, to possession above the surface. Its tremendous value for that purpose is now well recognized, and except therefor it is not now known to have any value at all. It can take the place of expensive equipment and operations which could partly do what it alone can do on a large scale. So, this energy must be regarded as property and as belonging to the owners of the pool. It is the property of those who have the right by virtue of their interests in land over the pool to take out the oil and gas; but in what proportions or to what extent do they own it?

"It seems to me that whether or not the oil and gas are owned in situ, the energy can in no event be said to be anything other than the common property of all the properties in the pool. If there were several separate owners of specific portions of a steam-boiler in which a high steam pressure had been developed and each respective owner had the right to utilize power existing within the boiler, would any one of the owners be the possessor of the right to a particular section of the existing pressure? There could be no physical separation of it. Each would be entitled to use only a fair proportionate part of the whole; and in taking it, he ought to be required to have due regard for the like right of the other owners.

"An obvious difference between such a situation and the one we are considering is that there the steam pressure is of no value to bring another thing of value out of the boiler, whereas, reservoir energy is of no value save to recover the oil. It does its work within the reservoir, thence up to and through the mouths of the wells. It is not only the power it possesses but the manner in which it exerts itself within the reservoir that counts. Hence, it is hardly correct here to say that a proprietor is entitled to his fair proportionate part of the energy, for all the proprietors are justly entitled to have it perform its work in an efficient manner. This may call for a substantial departure from any effort to proportionately distribute it.

"So, the ultimate conclusion in every state ought to be that no landowner owns any measurable part of the reservoir energy, but they all own it jointly and severally; that each has a mere right to the beneficial use of it as long as it lasts and that such use is subject to such reasonable regulation as will gain the greatest obtainable good for all."

Construction of Good Concrete Floor Demands Special Care

In making a concrete floor is it necessary to follow any other rules than those usually followed in concrete work? That is, do you use the same kind of mixture and so on that you do in making a concrete sidewalk? If there are any particular rules to follow I would be glad to know about them.—S. R. E.

The severe wear and abuse to which a floor finish is subjected demand that it receive special care in construction. Not only is there the abrasive action of foot traffic, but often the floor must withstand the sliding of heavy boxes and the steel wheels of loaded trucks. So durability is a prime requisite. To attain durability the following advice is given by L. H. Corning, structural engineer for the Portland Cement Association:

"The principles involved in good floor construction are simple but of vital importance. In the first place, it is necessary that the job specification be definite as to the quality of the aggregates, the quantity of mixing water to be used, the method of proportioning, the mechanical operations of placing and finishing and the protection of a newly placed floor until it has attained sufficient hardness for service.

"In a correctly built floor, tough, hard, durable aggregates are firmly held in a cement paste of high strength. These aggregate particles are at the surface of the floor and are the wear-resisting constituent of the concrete. Since the aggregates perform this important duty and represent about three-fourths of the mass of the hardened concrete, the necessity for proper quality can be readily appreciated. All aggregates should be clean and free from dust, clay, silt or foreign matter. New and untried aggregates should be carefully tested for durability before being used. Trap rock, granite, quartzite, gravel or limestone make excellent heavy duty floor aggregates.

"Grading of aggregates is as important as hardness and other physical characteristics. Poorly graded aggregates require an excessive amount of cement paste to fill the voids. A condition of this kind results in crazing and dusting of the surface and consequently a reduction in the wear resistance of the floor. Too much fine material necessitates a large quantity of mixing water and a high water-cement ratio means a low-strength, porous, nondurable concrete whether it is used for structural purposes or in a floor finish. To obtain the desired qualities in a concrete floor, select a fine aggregate consisting chiefly of grains from one-sixteenth inch to one-eighth inch in size with not more than 5 per cent passing a 100-mesh sieve nor more than 15 per cent a 50-mesh sieve. The coarse aggregate should consist of particles from one-eighth inch to three-eighths inch in size with at least 95 per cent passing a three-eighths inch sieve.

"Job experience and tests by years of service rather than mere academic theory have proved that the wearing quality of a concrete floor is to a great degree influenced by the proportions of cement, sand and coarse aggregate and the amount of mixing water, the latter being as important as any one of the other three. A concrete floor finish made with a large percentage of sand as compared with the quantity of coarse aggregate may work easily under the trowel but it will not be durable. The most satisfactory mixture for durability is one made of approximately one part cement, one part sand and two parts of coarse aggregate. Not more than 5 gallons of water per sack of cement should be added to these constituents including the free water in the aggregates which should be carefully determined and deducted from the specified quantity. Where mechanical methods of floating are employed an even smaller quantity of water may be used advantageously."

Information Needed to Settle an Argument About Deep Wells

Will you kindly give me the information which will settle an argument here? I want to know the depth and location of the deepest well in the world, also its production if it is a producer. I am sure I read last spring of a well at Bakersfield, Calif., which was drilled to a depth of 14,000 or 15,000 feet, but I am told the deepest well is about 11,000 feet.—J. J.

The deepest hole in the world is the test being drilled by the North Kettleman Oil & Gas Co., known as No. 1 Lillis-Welsh, recently reported as drilling out a lost bit at 10,050 feet. The total depth of this hole was 10,944 feet, at which point the bit was lost.

This is not a producer yet because of the condition of the hole, but it has encountered some gas and a little oil in the upper part of the lowest formation.

This department knows of no unusually deep well at Bakersfield, Calif., although the No. 1 Lillis-Welsh is not far distant.

It is difficult to state definitely at this moment just what well is the deepest producer, as there are several around 9,000 feet deep that have struck oil and produced. Such deep wells are difficult to control and changes occur in them almost weekly so while one deep well might have the record this week another might take it away next week.

The wells in Reagan County, Texas, are perhaps the largest group of deep producers, ranging from 8,500 to 9,500 feet in depth. Other deep wells are in California fields.

Why Was It Called That?

ROAD HOG

It need hardly be explained that the road hog is the driver of an automobile or truck who is hoggish in his use of the highway, always irritating to other drivers and usually a menace. The driver of an oil-field truck who is not considerate of the rights of others and careful in observing the rules of the road may easily acquire the reputation of being a road hog. A close relative of the road hog has come to light through the action of the government of British East Africa in prohibiting flying of airplanes at less than 1,500 feet above herds of wild animals. The Earl of Onslow, president of the society for preservation of the fauna of the empire, told a meeting of the society that it had been the habit of many East African aviators to swoop down on herds of wild game, stampeding them, separating young from mothers and causing many to die. "These aviators are the brothers of the road hog," the earl remarked.

ANNOUNCING "OILWELL'S" NEW

GRADE "A"

THE IMPROVED "TRIPLE TREATMENT"

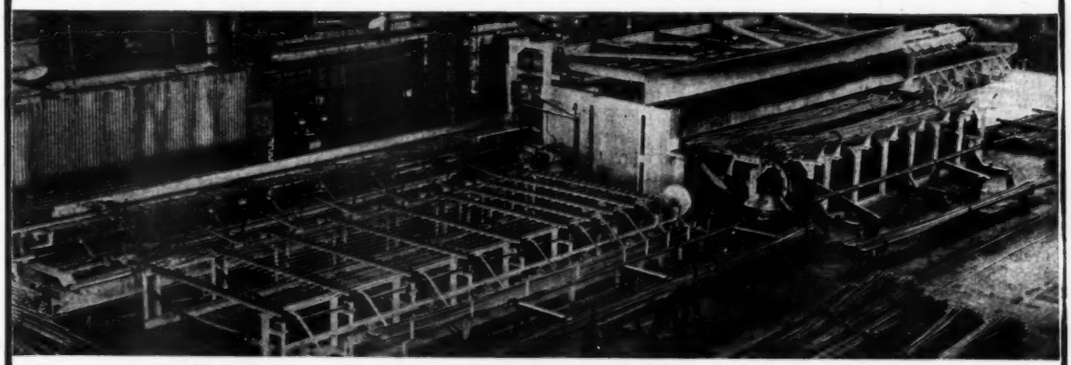
SUCKER RODS

AND PULL RODS

"OILWELL" GRADE "A" RODS ARE FULLY HEAT-TREATED, i. e., NORMALIZED, QUENCHED, AND DRAWN FROM END TO END.

"OILWELL" ONLY HAS THESE NEWLY DEVELOPED FACILITIES WITH "LABORATORY PRECISION CONTROL" TO PROCESS AND "PROOF-TEST" SUCKER RODS AND PULL RODS, INSURING UNIFORM PHYSICAL PROPERTIES THROUGHOUT THEIR ENTIRE LENGTH.

"PROOF OF QUALITY BY IMPROVED SERVICE"



"OILWELL'S" NEW HEAT-TREATING FURNACE AND AUXILIARY EQUIPMENT

NRA MEMBER U.S. WE DO OUR PART

Apply at nearest "OILWELL" store or office for detailed information.

OIL WELL SUPPLY CO. *Branch Stores in all Oil Fields*

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

2495

"OILWELL"

PERSONAL PARAGRAPHS

MAX J. KAPLAN, head of the Lakota Oil & Gas Company, has been in Casper, Wyo., on business.

* * *

THABIT ABDUNNOON, director of oil affairs in Iraq, has arrived in London, England, on his appointment as Chancellor of the Iraqi Legation.

* * *

VISCOUNT AND VISCOUNTESS BEARSTED have left England for a trip to the West Indies, and are expected to return to London in March.

* * *

R. T. THOMPSON, an official of the Stanolind Crude Oil Purchasing Company, was in Wichita, Kans., on business last week. Prior to moving to Tulsa, Mr. Thompson was located at Russell, in western Kansas.

* * *

M. OSTROVSKY, head of the Societe des Produits du Petrole Russe, has been appointed by the Soviet government chief of the Soviet Commercial Delegation in Paris, to replace MR. GOUREVITCH, who has been recalled to Moscow.

* * *

ORVILLE HARDEN, director of the Standard Oil Company of New Jersey, in charge of foreign operations, and E. HOLEMAN, assistant to Mr. Harden, left the first of the week on an inspection trip of the company's South American properties.

* * *

FRANK D. MacEACHERN, who has been manager of the middle Atlantic department for the Tide Water Oil Company, with headquarters at Philadelphia, Pa., has been appointed eastern sales manager. His offices are now located at the New York headquarters of the company.

* * *

J. D. WHEELER, petroleum engineer, Mid-Kansas Oil & Gas Company, Henderson, Tex., will discuss the relationship of the free gas area in the south end of the East Texas Field to the main producing area, before the regular meeting of the East Texas Chapter of the A.P.I. in Kilgore, Tex., February 23.

* * *

H. J. HAWLEY, of the Standard Oil Company of California, San Francisco, has been in Dallas, Tex., on business at the offices of the California Company.

* * *

PROF. D. C. MacLACHLIN, geologist from Wayne University, Detroit, Mich., recently made a tour of inspection of Central Michigan fields, visiting in Mount Pleasant, Mich.

* * *

F. E. ANDERSON, of Milford, Ind., representative of the International Derrick & Equipment Company, spent several days in Mount Pleasant, Mich., recently on business.

* * *

J. W. MEEHAN, of Blue Island, an industrial chemist, has arrived in Mount Pleasant, Mich., to direct preliminary operations of the Pure Oil Company's new brine disposal plant in the Central Michigan oil area.

* * *

GREGORY R. KISSIN and IVAN A. BESDROBNY, representing the drilling department of Grozneft, Grozny, U.S.S.R., and BORIS M. SHAIDEROV, director of the scientific research institute of Grozneft, are touring the Gulf Coast fields.

DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

February 22, 1909

William Armstrong has been made manager of the Laurel Oil & Gas Co., the headquarters of which is in Tulsa. He is from Pennsylvania and is a large stockholder in the company.

A prairie fire in the Childers district destroyed several oil tanks and set fire to five wells, in the Nowata Field, in Oklahoma.

Maj. J. W. Otley begins a series of interesting and informative letters in The Oil and Gas Journal on the geology and future oil possibilities of Mexico.

Alfred L. Snell, editor and chief statistician of the Oil City Derrick, died in Oil City Pa., on February 24, after a two weeks' illness. He was formerly editor of the Bradford Era and of the Petroleum Age.

Andy Gartlan, veteran Pennsylvania oil man, warns American producers that a flood of oil in Mexico will be poured into the United States if the countervailing duty on petroleum is removed in the revision of the tariff now in progress in Congress.

20 Years Ago

February 24, 1914

The combined production of Oklahoma, Kansas, Texas and Louisiana (Mid-Continent and Gulf Coast) is 278,000 bbls. per day. Stocks are being drawn upon.

P. J. White, wealthy oil man and president of the Exchange National Bank of Tulsa, recently married, engages a suite of six rooms in the new Tulsa Hotel as a home for himself and bride.

The number of automobiles registered in the United States in 1913 was 1,128,000. It is estimated that it will require 500,000,000 gallons of gasoline to run the automobiles this year and at 20 cents per gallon (there is no tax) the fuel bill of motorists will be $100,000,000.

Owen A. Evans, veteran production superintendent, and oil producer, dies in Excelsior Springs, Mo. He had served the Prairie and the Barnsdall companies.

Twelve Bartlesville sand wells in the Cushing Field, Oklahoma, are producing 18,500 bbls. per day. The price is $1 per barrel. The Prairie Oil & Gas Co. opened the Bartlesville sand production on the Tucker farm in Section 3-17-7.

10 Years Ago

February 21, 1924

Mid-Continent crude oil prices range from $1.15 to $2 per barrel. Pennsylvania Grade from $4 to $4.50 per barrel. Gulf Coast from $1.40 to $1.65. Central West from $1.93 to $2.13 per barrel.

R. L. Knowles, for 24 years with the Worthington Corp., died on February 14.

W. H. (Bill) Gray, Tulsa oil man and publicist, demands that the Carter Oil Co. post crude oil prices instead of purchasing on contract. Walter C. Teagle, president of the Standard Oil Co. of New Jersey, replies that contracts have been entered into because the Carter Oil Co. wishes to assure itself of high gravity crude oil, uncontaminated by heavier grades of crude.

J. F. DRAKE, president of the Gulf Refining Company, Pittsburgh, Pa., has been visiting the Houston, Tex., offices of the company.

* * *

BURT SUTHERLAND, of Pittsburgh, Pa., eastern representative of the Lee C. Moore Company, was in Mount Pleasant, Mich., on business last week.

* * *

T. H. HOBSON, of J. A. Gray & Company, distributor of Tide Water Oil products in Texas, was a business visitor in the East Texas area recently.

* * *

E. B. SLOAN, from the Chicago office, and H. F. BACON, Fort Worth, Tex., office of the Pure Oil Company, made an inspection trip of the Van Pool recently.

* * *

J. B. GRAHAM, National Tube Company, Pittsburgh, Pa., has prepared a special address on "A. P.I. Tubular Standards in the Mill and in the Field," to be delivered before the Mid-Continent Purchasing Agents Association meeting, February 27, at 7:30 p.m., in the auditorium at 315 Tulsa Building, Tulsa. This meeting is open and the public is invited. Mr. Graham is recognized as an authority on tubular goods and will illustrate his talk with specially prepared and selected slides.

SIR JOHN T. CARGILL, B.T., the chairman of the Burmah Oil Company, has been appointed chairman of Changkat Salak Rubber & Tin, Ltd.

* * *

SIR THOMAS ROYDEN, BART, C. H., a director of the Shell Transport & Trading Company, has been elected chairman of the Imperial Continental Gas Association.

* * *

R. G. DE LA MATER, assistant chief engineer, Parkersburg Rig & Reel Company, Parkersburg, W. Va., has been on an extended trip through the West including California, Gulf Coast of Texas, and Oklahoma.

* * *

DR. GUIDO RINGLER, director of the Society Italo-Americana del Petrolio, one of the Standard Oil Company of New Jersey subsidiaries in Italy, has been honored by appointment to the rank of Grand Official of the Corona d' Italia.

* * *

S. A. WHITEHURST, of the Shell Petroleum Corporation, St. Louis, Mo., has been added to the American Petroleum Institute subcommittee on tanker and barge fires, by C. A. ELLIS, chairman of the committee on fire prevention in marketing.

* * *

BUFORD CREED is now with the Halliburton Oil Well Cementing Company at the Kilgore, Tex., office. He was formerly head of the Science Department of the William James High School in Fort Worth, Tex., and received two degrees in geology from Southern Methodist University.

* * *

L. F. KNOX has been appointed to membership on the American Petroleum Institute committee on Accident Prevention in Refineries to take the place of W. C. LYNCH, it was announced by R. P. ANDERSON, secretary of the committee. Both men are affiliated with the General Petroleum Corporation of California, Los Angeles. C. W. SMITH, of the Standard Oil Company (Indiana), Chicago, is chairman of the committee.

* * *

RALPH G. COAD has been elected chairman of the Metropolitan Utilities District in Omaha, Neb.

* * *

BON JASPERSON, gas operator, of Kingsville, Ontario, is spending some weeks at Daytona Beach, Fla.

* * *

J. D. SCOTT, employed at the Texas Company's refinery at Casper, Wyo., has been transferred to Amarillo, Tex. He left for that place accompanied by his family, February 15.

* * *

TRAVIS L. GOLAY, deputy supervisor for the Texas Railroad Commission, Kilgore, has resigned to go with the Public Pipe Line Company. J. D. COPELAND will succeed Mr. Golay.

* * *

JAMES V. ALLRED, attorney general of Texas, is in Washington, D. C., conferring with Secretary Ickes and other Federal authorities in regard to the "hot oil" situation in East Texas.

* * *

W. N. MEYER, employe of the Texas Company refinery at Casper, Wyo., has been transferred to the company's research laboratories at Beacon, N. Y., and has left for that place, accompanied by his family.

R. A. JOSEY, independent oil man, Houston, Tex., has been visiting in Washington, D. C.

* * *

A. W. McKINNEY, of Toledo, Ohio, visited Mount Pleasant and Michigan oil fields last week.

* * *

EDWARD R. HASTINGS, Selby Oil & Gas Company, is in Austin, Tex., this week in the interests of his company.

* * *

L. L. FOLEY, petroleum engineer, Mid-Kansas Oil & Gas Company, Tulsa, is attending the Railroad Commission hearing in Austin, Tex., this week.

* * *

DR. JOSEPH B. UMPLEBY, consultant, Norman, Okla., is in New York City on business and while there will attend the annual meeting of the A.I.M.E.

* * *

JOHN McGEE, petroleum geologist, now residing at Cripple Creek, Colo., was a visitor in Tulsa recently. He is a native of Eufaula, McIntosh County, eastern Oklahoma.

* * *

HENRY V. FOSTER, president of the Foster Petroleum Company, Bartlesville, Okla., has leased a large furnished apartment at 1000 Park Avenue, New York City.

* * *

CAPT. E. N. STANLEY, who has been reported planning to leave his post as chief deputy supervisor in East Texas, is said to have decided to retain his position until April 1.

* * *

H. D. CRAWFORD, eastern sales manager of the Parkersburg Rig & Reel Company, of Parkersburg, W. Va., recently paid a visit to the company headquarters in Central Michigan at Mount Pleasant.

* * *

JOHN L. HERSCHBACK, vice president, Arcadia Refining Company, will maintain East Texas headquarters in Tyler. The consolidation of East Texas and West Texas operations will move HOLLIDAY HALEY, production superintendent, into the Dallas, Tex., office.

* * *

J. R. McCOMIC, former land man for Shell Petroleum Corporation in the Shreveport territory, has been appointed comptroller of the CWA in Caddo Parish, Louisiana. He was with the Shell corporation for nine years and previously scouted for Gulf Refining Company and the Texas Company.

* * *

MR. AND MRS. J. N. SCOTT, of Petrolia, Ontario, have announced the engagement of their eldest daughter, ANONA BERYL, to JOHN A. SUTHERLAND of Negritos, Peru. Miss Scott left this week for Peru where the marriage will take place. Mr. Sutherland is on the International Petroleum Company staff.

* * *

H. A. COFFIN, president, and L. T. MORROW, of the White Star Refining Company, Detroit, Mich., accompanied by their wives, were passengers on the Lafayette of the French line which left New York City, February 17, on a 19-day cruise to the West Indies, the north coast of South America, and the Panama Canal Zone.

* * *

J. C. VAN ECK, chairman of the board of Shell Union Oil Corporation, New York; ALEXANDER FRASER, president of Shell Petroleum Corporation, St. Louis, Mo.; DR. W. VAN HOLST PELLEKAAN, vice president of Shell Petroleum in charge of exploration, and H. J. KEMLER, also of St. Louis, stopped in Tulsa during their visit to the Mid-Continent oil fields. G. S. ROLLIN, vice president of the Mid-Continent area; R. E. SHUTT, exploration manager, and R. W. BOND, assistant production manager, of Tulsa, accompanied them on their trip through the company's properties in Kansas and Oklahoma. From Tulsa they proceeded to Texas.

Bahrein Island Resident Manager

It is a long treck from Dallas, Tex., to the Island of Bahrein in the Persian Gulf, near the mainland of Iraq, but Fred A. Davies has made the trip before and he is well prepared to go back again as resident manager of the Bahrein Petroleum Company, Ltd., a fully owned subsidiary of the Standard Oil Company of California.

FRED A. DAVIES

Mr. Davies was born in South Dakota and reared in Minnesota, but he has lived in Texas for the last three years. He first went to Bahrein in 1930 to do several weeks geological work. Upon his recommendations his company acquired large holdings, which the subsidiary, the Bahrein Petroleum Company, Ltd., has been developing, the first wildcat test proving a producer.

The degree of E.M. was conferred on Mr. Davies by the University of Minnesota in 1916 and he went to work for the Anaconda Copper Mining Company in Anaconda and Great Falls, Mont., shortly afterward. Later he joined the gas service of the U. S. Army, serving in that department until the spring of 1919.

In the spring of 1922 he went to work for the California Standard in the Rocky Mountain division, remaining there until 1930, when the parent company sent him to the Island of Bahrein. He returned from Bahrein in the fall of 1930 and was transferred to Texas in the spring of 1931, residing in Dallas from that time, and holding the position of assistant manager of the southern district for the Standard of California.

Mr. Davies' departure for the east leaves the chairmanship of the Hobbs Pool (New Mexico) Proration Advisory Committee vacant. Prior to being made chairman of that body he had served as secretary.

M. T. ARCHER, of Toledo, Ohio, was a Mount Pleasant, Mich., visitor recently.

* * *

J. W. COAST, refinery superintendent for the Cosden Oil Company, Big Spring, Tex., is in New York and Chicago on company business. Mr. Coast has been in charge of reconstruction and modernizing the large plant of the company at Big Spring.

* * *

JAMES A. MOFFETT, newly elected vice president of the Standard Oil Company of California, and prominent in the oil administration at Washington, D. C., left New York City, February 17, on the Europa on a trip to European points.

* * *

C. P. DIMIT, vice president in charge of production of the Phillips Petroleum Company; DON KNOWLTON, head of the production engineering department, both of Bartlesville, Okla., and L. B. HOLLAND, Breckenridge, superintendent of production in Texas, have been visiting in Houston, Tex., and the Gulf Coast.

* * *

K. R. KINGSBURY, president of the Standard Oil Company of California, accompanied by MRS. KINGSBURY, left New York, February 16, on the Santa Rosa of the Grace line for their home in San Francisco, Calif. Mr. Kingsbury, as a member of the Planning and Co-ordination Committee, has spent several months in Washington, D. C.

* * *

JOHN D. ROCKEFELLER, SR., accompanied by 24 members of his household, left North Tarrytown, N. Y., his summer home, on Friday, for Ormond, Fla., where he expects to stay until the end of May. JOHN D. ROCKEFELLER, JR., accompanied his father to the special train where a large crowd of friends and well-wishers were gathered despite the efforts to keep his departure secret. Mr. Rockefeller usually makes the trip to Ormond to spend the winter in the fall, but was prevented this year due to illness. His health has improved in recent weeks and he was able to walk unaided from his car to the train.

AMOS L. GUTHRIE, of the land department of the Gypsy Oil Company, who has been ill, is back on the job.

* * *

D'ARCY CASHIN, consulting geologist, Houston, Tex., spent several days in New Orleans, La., taking in the Mardi Gras.

* * *

FRANK HERALD, consulting geologist, Fort Worth, Tex., is attending the meeting of the petroleum division of the A.I.M.E. in New York City this week.

* * *

CHARLES RICHARDSON, independent oil man, and MRS. RICHARDSON, Lake Charles, La., were among the Mardi Gras visitors in New Orleans, La.

* * *

C. F. COLLINS, formerly with the Gulf Production Company in South America, has joined the sales staff of Jarecki Manufacturing Company and is to be located at McPherson, Kans.

* * *

E. B. SWANSON, chief petroleum economist of the U. S. Bureau of Mines and member of the Federal Petroleum Board, was in Michigan last week on a general tour of inspection through Central Michigan oil and gas fields.

* * *

N. A. BEST, Mid-Continent division manager, Dowell Incorporated, Tulsa, is making a trip through the East Texas Field this week. Mr. Best is scheduled to speak before the Kilgore meeting of the A.P.I. on Friday evening on "Acid Treatment of Wells."

* * *

OTHRA H. GRIMES, of Tulsa, owner of a new casinghead gasoline plant in the East Pool, Central Michigan, spent several days in Mount Pleasant, Mich., recently on business, arriving just in time for Michigan's severe cold wave.

* * *

TOM NOLAN has resigned from the Texas Railroad Commission field staff and taken a position with Sturm-Nolan Drilling Company operating in the West Texas district. He had headquarters at McCamey, with the commission.

* * *

GEORGE D. BROWN, formerly of Petrolia, Ontario, who recently returned to Canada from the Peruvian fields, after nine years' service with the International Petroleum Company, has taken up his residence at Woodstock, Ontario.

* * *

J. HOWARD MARSHALL, member of the Petroleum Administrative Board, has returned to Washington, D. C., after a flying trip to Tyler, Tex., in regard to suits which have been filed against producers and refiners by the Government.

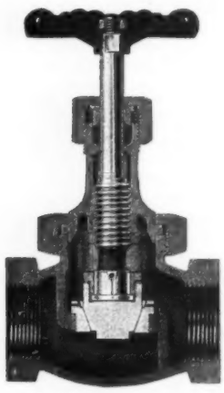
* * *

L. E. FOUST, production superintendent, Midway, Calif.; W. F. WHITE, company librarian, San Francisco, Calif., and J. J. CURNOW, engineer, producing division, Kern, Calif., will receive gold emblems with two diamonds, signifying 30 years' service with the Associated Oil Company. Nineteen employes will receive gold emblems with one diamond, signifying 25 years' service: I. BUSCH, pumper, Coalinga; W. J. COOK, plant superintendent, San Francisco; J. C. CURNOW, pumper, Kern; E. B. FOUST, head roustabout, Midway; E. B. HAMELL, pumper, Culver City; L. E. HANST, head well puller, Culver City; H. HASCH, storekeeper, Midway; L. M. HICKEY, first engineer, Belridge-Monterey pipe line; E. W. HILL, foreman gauger, Belridge-Monterey pipe line; A. S. JONES, manager of pipe lines, San Francisco; E. M. MERRELL, clerk, San Francisco; M. M. MINTON, watchman, Kern; J. J. MURRAY, superintendent marine terminal, San Pedro; H. E. ORBISON, clerk, San Francisco; F. M. POWELL, pumper, Culver City; E. M. RUTHERFORD, secretary to the president, San Francisco; F. R. STARRS, port steward marine general office, San Francisco; L. M. WARING, roustabout, Ventura; and S. E. WILLIAMS, watchman, Southern California pipe line.

NEW AND IMPROVED EQUIPMENT

Lunkenheimer Valve Made to Stand Hard Conditions

For severe service demanding maximum resistance to destructive action on valve seat bearings, the Lunkenheimer Co., Cincinnati, Ohio, has developed



"Renewo" and "Ferrenewo" valves with plug type N85 alloy seats and discs.

N85 alloy (patent applied for) is a new Lunkenheimer research development. It is a nongalling, nonferrous composition of great hardness (300 Brinell); resistant to wear, abrasion, erosion and corrosion, and retains its hardness at high temperatures.

Plug type valves are made with full length, deep-seated plugs. Each plug is ground into its own seat, to a uniform bearing from end to end, insuring a leak-proof fit.

Iron body bronze-mounted "Ferrenewo" plug type valves are made for 150 pounds S.P. while the bronze "Renewo" valves are available in both 200 and 300 pounds S.D. patterns.

Excepting bodies and bonnet rings, all parts of "Ferrenewo" and medium "Renewo" valves are interchangeable, so it is necessary to carry only one stock of parts for both valves. This interchangeability feature applies also to the various patterns of extra heavy "Renewo" valves. Plug type valves are illustrated and described in Booklet 541-A, sent on request.

For Atmosphere That May Contain an Explosive Gas

A new vacuum-contact, auxiliary-potential relay, developed by the General Electric Co., closed and interrupted a 5½ ampere, 250-volt direct-current circuit 10,000,000 times in recent tests without requiring any maintenance. The relay, designated as type HBA, is intended for use in atmospheres which may contain explosive gases. It is particularly suitable for application in oil refineries.

The equipment, enclosed in a steel container, has single-pole, double-throw contacts located in a heavy walled glass tube, from which the air has been evacuated. At one end of the tube is a metal bellows. A movable contact connected to the bellows operates between two stationary contacts. Normally, one contact is closed and upon the application of energy to the coil the normally closed contact opens and the normally open contact closes.

The relay ratings are 15 amperes continuous, 10 amperes interrupting at 115 and 230 volts, 60 cycles and 125 and 250 volts direct current.

Among the Equipment Houses

Dewey T. Ross, Inc., engineering, construction and consulting organization of Tyler, Tex., has moved from the Peoples National Bank Building to the Citizens National Bank Building.

—

The Bridgeport Machine Co., Wichita, Kans., is offering a prize of $200 for the best answer to the question, "What do you like about Bridgeport?"

—

The Axelson Manufacturing Co. has established a store in Bakersfield, Calif. Stanley Morrish, formerly in Santa Fe Springs, has been placed in charge.

—

A. G. Pratt, president of the Babcock & Wilcox Co., has been elected to the board of directors of the Worthington Pump & Machinery Corp.

—

The Air Reduction Co., Inc., has exercised its option on the rest of the capital stock of the Wilson Welder & Metal Co. of North Bergen, N. J. Air reduction thus becomes the first of the oxy-acetylene welding companies to own a 100 per cent interest in an electric welding organization.

—

A. L. Struble has been made sales manager of the truck division of the Reo Motor Car Co., succeeding Carl Parker, resigned.

—

The board of directors of the Hydraulic Press Manufacturing Co., Mount Gilead, Ohio, manufacturer of hydraulic presses and equipment, has elected Frank B. MacMillin president and general manager and Howard F. MacMillin vice president and assistant general manager. Walter G. Tucker, son of the founder of the company, was advanced from the presidency to chairman of the board.

—

George H. Cressler, former vice president and general sales manager of the Stacey Manufacturing Co. and vice president of the Stacey Brothers Gas Construction Co. of Cincinnati, Ohio, has joined the Graver Tank & Manufacturing Corp.

—

Ralph N. Brodie, president of the Ralph N. Brodie Co., Inc., Oakland, Calif., is on an extended trip through the United States involving six weeks of travel.

—

The Hays Corp., Michigan City, Ind., announces the following new representatives: T. C. Messplay, 2219 East Sixty-ninth Terrace, Kansas City, Mo., Kansas and western Missouri; Fairman B. Lee, 114 Railroad Avenue South, Seattle, Wash., Washington; Leinart Engineering Co., 427 Walnut Street, Knoxville, Tenn., eastern Tennessee; Engineering Sales Co., Meyer Building, Holland, Mich., western Michigan.

—

Paul Cavins, president of the Cavins Co., Long Beach, Calif., is on a tour of the Mid-Continent and Gulf Coast oil fields, making a survey of conditions. The Cavins Co. manufactures the Cavins, a combined bailer, fishing tool and perforation washer.

—

The Poole Foundry & Machine Co., Woodberry, Baltimore, Md., has appointed the J-B Engineering Sales Co., New Haven, Conn., as its representatives for the sale of the Poole flexible coupling in Connecticut, and Frank M. Young, 2636 North Forty-eighth Street, Milwaukee, Wis., for that district.

—

The Kellogg Manufacturing Co. announces that H. O. Holland will represent it in New England with headquarters in Boston. L. D. Smith, for years with the Manley Manufacturing Co., will represent Kellogg in Pennsylvania, Maryland and District of Columbia territory.

—

J. H. Connors, vice president and general manager of the mechanical goods division, B. F. Goodrich Co., has been named chairman of divisional code authority for the mechanical rubber goods group of the industry, it is announced by A. L. Viles, president of the Rubber Manufacturers Association.

—

The United American Bosch Corp., Springfield, Mass., has acquired the assets and good will of the Kompak Co., of New Brunswick, N. J., manufacturer of automatic gas water heaters. The Kompak equipment and organization have been moved to Springfield.

—

"For pioneering in industrial research," the General Electric Co. was presented February 1 with a gold medal by the American Institute of the City of New York, which, founded more than 100 years ago, includes among its objectives the recognition of high achievements in science.

—

Louis H. Brendel, for the last five years advertising manager for the Mason-Neilan Regulator Co., has joined the staff of the K. R. Sutherland Co. of Boston. The Mason-Neilan Regulator Co., manufacturer of automatic regulating and control equipment, has selected the K. R. Sutherland Co. to direct its advertising.

Caterpillar Twenty-Eight Succeeds the Twenty-Five

The Caterpillar Tractor Co., Peoria, Ill., has announced the Twenty-eight tractor to succeed the model Twenty-five. The new machine incorporates all the features of design and construction of the Twenty-five along with the advantages of increased power and weight.

The four-cylinder, valve-in-head engine has a bore and stroke of 4 1/16" x 5½" and develops a maximum of 30.49 horsepower at the drawbar and 37.47 horsepower at the belt, according to the manufacturers. Ground contact, with standard tracks, is 1,251 square inches and shipping weight is 7,870 pounds.

Graduated Speed Variation in Minute Steps Is Gained

Hydraulic couplings, manufactured by the Hydraulic Coupling Corp., 1349 Harper Avenue, Detroit, Mich., are generally applied to installations using a constant-speed squirrel-cage motor as the driver, and function as a direct driving medium between the motor and fan.

They are applied where a graduated speed variation is required in minute steps, and where remote control to effect this variation is desired. They are made in sizes and arrangements to transmit from 50 to 1,000 b.h.p. at standard commercial speeds.

Men Well Known in the Equipment Field

The Macco Construction Co., 815 Paramount Boulevard, Clearwater, Calif., has been made exclusive distributor of Emsco

W. A. TROUT

derricks in California and W. A. Trout has been made vice president of the Macco company.

Mr. Trout formerly was vice president and general manager of the Emsco Derrick & Equipment Co. He formerly was associated with the Macco Construction Co. also, but not active in the affairs of that organization.

Star Drills Are Added to List of Armstrong's Tools

Armstrong Brothers Tool Co., 317 North Francisco Avenue, Chicago, has added Star drills to its list of products. They are drop-forged from special high

carbon chisel steel, hardened and tempered and it is asserted hold their sharpness. They are finished in black baked enamel and the edges are ground bright. The shanks are of proper stiffness to prevent bending.

The new line is introduced complete with drills in all sizes. The 8, 12, 18 and 24-inch lengths are made in diameters from one-quarter to 1 inch by sixteenths inch; large diameters from 1 to 1½ inches come by eighths in the 12, 18 and 24-inch lengths. Armstrong Starr drills are of the four-point type.

NEW SMALL GE HEATING UNITS

To retard chemical action on lead-sheathed units used for heating corrosive solutions, such as pickling and plating baths, the General Electric Co. has developed a new heating unit which contains a sheath-wire winding about which is cast a heavy block of lead. The new unit has a low watt density of 13 watts per square inch of immersed surface, a factor which should greatly increase the life of the device. The company has also announced a new copper-sheathed unit to meet the need for a heating device which can be carried about, placed in almost any vessel containing water, and plugged into an ordinary power circuit to heat the water.

MARKET RECORD OF OIL SECURITIES

Active Oil Stocks Listed on New York Stock Exchange

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1934 High	1934 Low	Week ended Feb. 17 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	1933 High	1933 Low	1932 High	1932 Low	1931 High	1931 Low
50⅜	41½	7,400	50⅜	47½	50	Amerada Corp.	774,875	N.P.	50cQ	1-31-34	47⅝	18½	22¾	12	23	11¼
35¼	28¼	22,100	34½	32⅛	34½	Atlantic Refining	2,673,834	$25	25cQ	3-15-34	32½	12⅜	21⅞	8⅝	23⅝	8⅝
10	7¾	22,500	9¾	8⅞	9⅝	Barnsdall Corp.	2,186,385	$5	....	5-11-31	11	3	7	3⅜	14½	4
19¼	11⅜	47,700	18⅛	16⅝	17½	Columbia Gas & Elec.	11,610,036	N.P.	12½cQ†	2-15-34	28⅛	9	21	4¼	45⅝	11⅝
14¼	9¾	195,400	14¼	13¼	14	Consolidated Oil Corp.	14,218,835	N.P.	28c	4- 7-34	15¾	5	9	4	15⅞	4⅛
20¾	16½	55,200	20⅜	18½	20⅜	Continental Oil of Delaware	4,738,593	$5	....	.....	19⅝	4⅞	9⅜	3⅝	12	5
21¾	15⅛	10,100	21½	18⅞	21¼	General Asphalt	387,149	$10	....	6-15-32	27	4⅝	15½	4¾	47	9⅝
5½	4½	8,500	5¼	4⅝	5¼	Houston Oil (new)	1,098,618	$25	....	10-17-30	7⅜	1⅞	5⅜	1⅛	14⅛	3
2¾	1¾	800	2¼	2⅛	2¼	Louisiana Oil Refining	1,302,158	N.P.	....	.....	4	⅝	2¼	½	4½	1
14¾	11⅝	9,100	14⅛	12⅞	14⅛	Mid-Continent Petroleum	1,857,912	N.P.	....	2-16-31	16	3¾	8⅞	3¾	16¾	5
18¾	11½	2,200	18⅛	16¼	18	National Supply of Delaware	382,591	$25	....	5-15-31	28⅝	4	13	3½	70¼	5
15⅞	12⅝	28,400	15¼	13¾	15½	Ohio Oil Co.	6,563,107	N.P.	....	12-15-32	17⅝	4¾	11	5	19½	5½
8¼	6⅞	700	8	7⅛	7⅝	Pacific Western Oil	1,000,000	N.P.	25c‡	10-25-33	9½	3	8	3	15	2⅞
2⅜	1¼	500	2	1⅞	2	Panhandle P. & R.	198,770	N.P.	....	.....	4¼	⅝	1¼	¼	4¼	⅝
18¾	15⅛	19,500	18	16½	18	Phillips Petroleum	4,155,113	N.P.	25c	2-15-34	18¾	4¾	8⅛	2	16⅝	4
16¾	12⅝	21,500	16⅜	15	16⅛	Plymouth Oil Co.	990,261	$5	25cQ	12-21-33	17⅝	6¾	12½	6	19	6
14⅞	10⅛	64,300	14⅞	12⅝	14⅝	Pure Oil	3,038,370	N.P.	....	9- 1-30	15⅝	2½	6½	2⅞	11⅞	3¼
38⅞	36	600	38⅞	38⅜	38¾	Royal Dutch N. Y. shares	432,224	$14	$1.07½	8-14-33	39¾	17⅝	23¾	12⅛	42⅝	13
35	25⅜	11,000	34½	30	33¾	Seaboard Oil of Delaware	1,204,460	N.P.	15cQ§	3-15-34	43⅜	15	20⅜	6⅝	20¾	5½
11½	7⅝	20,000	11	9¾	10⅞	Shell Union Oil	13,070,625	N.P.	....	6-30-30	11⅝	4	8¾	2½	10¼	2½
89	58	1,200	83¾	82	83¼	Shell Union Oil pfd.	400,000	$100	....	7- 1-31	61	28½	65¼	18	78	15
11¼	9	2,800	11¼	9⅞	11	Simms Petroleum	461,000	$10	25c	1-17-34	12⅝	4⅞	7½	3¼	11	3½
11½	7⅞	2,300	10⅞	9⅞	10⅝	Skelly Oil	1,008,514	$25	....	12-15-30	9⅞	3	5¾	2½	12⅞	2
19⅞	15⅛	53,500	18½	16⅞	18⅜	Socony-Vacuum	31,019,694	$25	15c	3-15-34	17	6	12¼	5¼	21	8⅜
42⅞	37½	23,800	42⅞	39½	42¾	Standard Oil of California	13,102,900	N.P.	25c	3-15-34	45	19½	31⅞	15⅛	51¾	23⅛
38	34	300	34¼	33¾	34¼	Standard Oil of Kansas	200,000	$10	50cQ	4-30-34	39⅞	12¾	16½	7	19	7¾
50⅛	44¼	73,400	50⅛	47⅛	49¾	Standard Oil of New Jersey	25,740,965	$25	50cSA	12-15-33	47½	22¾	37⅜	19⅞	52½	26
61¼	51½	1,400	61	60	60½	Sun Oil	1,591,110	N.P.	25cQ	3-15-34	59	35	39⅞	24⅜	45¼	26¾
29⅜	23⅛	18,100	28½	26⅜	28¼	Texas Corp.	9,486,417	$25	25cQ	1- 1-34	30⅛	10¾	18¼	9¼	36¼	9⅞
4½	3⅞	4,700	4⅜	3⅞	4⅜	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	6½	1⅝	4	1½	6½	1⅞
11⅝	8½	20,400	11¼	10¼	11¼	Tide Water Associated	5,613,800	N.P.	....	2-16-31	11⅜	3⅛	5⅝	2	9	2⅛
72	64½	500	71½	69½	71½	Tide Water Associated pfd.	666,524	$100	$1.50Q	12-23-33	65¼	23½	60	20	68	20½
20½	18¼	12,000	19¾	17⅞	19⅝	Union Oil of California	4,386,070	$25	25cQ	2-10-34	23⅜	8½	15⅜	8	26⅝	11
21	15⅝	1,400	20⅜	20	20	Union Tank Car	1,200,000	N.P.	30cQ	3- 1-34	22⅜	10½	19¼	11¾	25⅛	16
5⅛	3⅝	1,600	5	4½	5	Wilcox Oil & Gas	424,839	$5	....	5-10-28	5½	2	8¾	2¾	9⅜	2¾

*Ex-dividend. †Payable in 5 per cent convertible preferred stock. ‡Initial dividend. §Plus extras.

Active Oil Stocks Listed on New York Curb

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1934 High	1934 Low	Week ended Feb. 17 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	1933 High	1933 Low	1932 High	1932 Low	1931 High	1931 Low
37	32	300	37	35	37	Buckeye Pipe Line Co.	200,000	$50	75cQ	3-15-34	39¾	25	35	17½	56	30
4	3	3,700	3⅝	3⅛	3⅝	Carib Syndicate	579,000	25c	....	.....	7¾	¼	¾	¼	2⅜	¼
126	118½	300	125	123	123	Chesebrough Mfg. Co.	120,000	$25	$1Q†	3-30-34	129	71	90	53	129½	75
4¼	1¾	46,900	3⅞	3⅛	3¾	Cities Service	37,804,394	N.P.	....	6- 1-32	6¼	1½	6⅞	1¼	20¾	5
3¼	2⅛	2,100	2⅞	2¼	2¾	Colon Oil	2,200,000	N.P.	....	.....	4	¼	1¼	¼	3⅛	¼
3⅞	1⅝	2,000	3¼	2½	3	Cosden Oil	399,687	$1	....	.....	3⅞	1⅜	2⅞	⅛	3¾	⅜
13	9⅝	22,800	12	11⅜	11⅞	Creole Petroleum	6,974,356	$5	....	.....	12	4¾	3⅞	1¾	3⅞	1⅝
7½	4¾	100	6⅝	6⅝	6⅝	Darby Petroleum	509,696	$5	25c	2-15-34	8	2⅛	7⅛	1⅝	2½	1⅝
2¼	1⅝	100	2¼	2¼	2¼	Derby Oil & Refining	263,162	N.P.	....	.....	2¾	⅞	3	1	6	1½
35¾	33	No sales ..	..	..	..	Eureka Pipe Line	50,000	$100	$1Q	2- 1-34	41¾	20	35	18	36	19
76¾	58½	4,700	75⅛	69	74⅞	Gulf Oil Corp.	4,538,101	$25	....	10- 1-31	62	24	44¾	23	75½	25⅜
43¼	33¼	21,300	43¼	38⅞	43¼	Humble Oil & Refining (new)	8,923,935	N.P.	50cQ	1- 1-34	105½	40	55	35⅝	72	44½
14½	12⅝	19,000	14½	13⅜	14½	Imperial Oil of Canada	26,742,792	N.P.	12½c‡	3- 1-34	15⅞	6½	10⅞	6¼	18¼	7⅜
6⅞	4⅝	400	6⅞	6¾	6¾	Indiana Pipe Line	300,000	$10	15cSA†	11-15-33	8	3⅛	7½	2¾	21⅛	5½
23⅜	19⅜	9,600	23⅜	22	23⅛	International Petroleum	14,247,088	N.P.	28cQ‡	12-15-33	23½	8⅞	12¼	8	15½	7⅜
3⅛	2⅛	3,700	2¾	2⅝	2⅝	Louisiana Land & Exp.	3,000,000	N.P.	....	.....	2¼	⅛	2½	½	2	½
5⅞	4¾	200	4⅞	4⅝	4⅞	Lion Oil Refining	270,000	N.P.	....	10-27-30	9½	1¼	3½	⅞	6¾	1½
8¾	5¾	3,600	7¾	7¼	7½	Lone Star Gas	5,382,723	N.P.	16cQ§	12-30-33	11⅞	4¾	11	3⅜	29	5½
5⅜	4	1,000	5	4⅞	5	Mountain Producers	1,682,182	$10	15cQ	1- 2-34	6½	2½	4¾	2⅛	5⅞	2
15¼	14	1,000	15	14½	15	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-34	20	10	14⅝	8	26½	9¾
9	8	1,000	9	8½	9	National Transit	509,000	$12.50	40cSA	12-15-33	10	5½	10½	6	17½	5
2⅛	1¾	300	2	2	2	New Bradford Oil	1,445,202	$5	10c	3-15-34	2⅛	½	⅞	¼	1½	⅛
1⅜	1	No sales ..	..	..	..	New Mexico and Arizona	1,000,000	$1	....	.....	1⅞	½	1¼	⅜	3	¾
4	3	100	3⅞	3⅞	3⅞	New York Transit	100,000	$5	15cSA	10-14-33	4⅞	3	9¾	7½	14½	5⅞
7	4⅝	300	6⅝	6⅜	6⅜	Northern Pipe Line	120,000	$10	25cSA	1- 2-34	6½	4¼	5½	3½	35½	20
1⅞	⅞	6,100	1⅜	1¼	1¼	Pantapec Oil	1,608,700	N.P.	....	.....	3¾	⅛	⅝	⅛	2	⅜
3	1¼	1,100	2⅞	2½	2½	Ryan Consolidated	296,931	N.P.	....	.....	4¼	⅝	2⅛	⅝	3	¾
7¼	5¾	2,100	7⅛	6⅞	7⅛	Salt Creek Producers	1,496,859	$10	20cQ	2- 1-34	9¼	3½	5½	2⅞	7⅝	2¾
23⅞	17½	1,100	20½	19½	20½	South Penn Oil	1,200,000	$25	25cQ	12-30-33	22⅛	11	16½	9⅝	23⅞	9¼
4¾	4	700	4½	4⅛	4½	Southern Pipe Line	100,000	$10	10cSA	3- 1-34	6	2⅛	10	3¾	17	7
43	41	No sales ..	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$1Q	12-27-33	43	24½	37	27	42½	25
32¾	31⅛	23,100	31⅞	30⅞	31¾	Standard Oil of Indiana	15,941,894	$25	25cQ	3-15-34	34	17	25⅛	13⅛	38½	13½
17⅝	14⅝	6,700	17⅛	16	17⅛	Standard Oil of Kentucky	2,606,983	$10	25cQ	12-15-33	19¼	8⅜	15⅞	8⅞	23⅝	12⅛
16⅝	13½	300	16⅞	16	16	Standard Oil of Nebraska	190,822	$25	25cQ	3-20-34	20½	11	19	10¼	36½	16
27½	23¼	1,300	26½	24¾	26½	Standard Oil of Ohio	753,740	$25	....	1- 3-33	41	15½	30⅛	15½	62½	23
2	1⅛	14,700	2	1⅝	2	Sunray Oil	1,162,840	$5	....	4-15-31	1½	¼	⅝	⅛	5¼	¼
11	6¼	8,100	10	9⅛	9⅞	Texon Oil & Land	936,028	N.P.	15c	1- 2-34	13¾	6¼	10½	4½	12⅞	2½

*Ex-dividend. †Plus extras. ‡Payable in Canadian funds. §Payable in preferred stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

Wildcat Operations in Gulf Coast
(Continued from Page 66)

Sinclair Prairie Oil Co.'s No. 17 Wilburn, 125 ft. N of S line, 150 ft. W of No. 16, H. Griffith League .... T.D. 1,259 ft.; cmtd. cavity; drlg. out cmt.

Sun Oil Co.'s No. 15 Wilburn, 405 ft. from E, 50 ft. from W line ..... Drlg. shale and lime 3,181 ft.

Sun Oil Co.'s No. 17 J. Wilburn, Henry Griffith League, 150 ft. W of No. 6 and 50 ft. S of N line..... Drlg. shale 4,118 ft.

Sun Oil Co.'s No. 18 J. Wilburn, Henry Griffith League, 50 ft. N of S line, 50 ft. E of W line of lease..... T.D. 4,524 ft.; P.B. 2,929 ft.; sidetracking in shale 3,933 ft.

Sun Oil Co.'s No. 19 J. Wilburn, 220 ft. E of W line, 343 ft. S of N line, Wm. Hodges Sur. ..... Moved off derrick.

Sun Oil Co.'s No. 21 J. Wilburn, Wm. Hodges Sur,. 50 ft. N of No. 20 ..... Rigging up.

Sun Oil Co.'s No. 20 J. Wilburn, Wm. Hodges Sur., 60 ft. E of W line, 343 ft. S of N line ..... Cavity 980 ft.; abd.

Sun Oil Co.'s No. 4 Higgins, Wm. Hodges Sur., 100 ft. W of No. 2 ..... Rock; T.D. 1,072 ft.; drlg. out cmt. 980 ft.

Superior Oil Corp.'s No. 3-A Barber (W.O.), Henry Griffith League ..... Cutting and pulling screen 5,148 ft.

Texas Gulf Prod. Co.'s No. 12-B Kirby, Henry Griffith League, 80 ft. S of N line and direct offset of Texas Gulf's No. 2 J. M. Fitzgerald ..... T.D. 965 ft.; cmtd. 16-in. csg. on bottom.

Texas Gulf Prod. Co.'s No. 8-H Kirby, 333 ft. W of No. 6-H, 70 ft. N of S line, Henry Griffith League (W.O.) ..... T.D. 5,024 ft.; sidetracked at 3,179-5,022 ft; P.B. 3,950 ft; drlg. sticky shale 4,165 ft.

Texas Gulf Prod. Co.'s No. 4 Wilburn, Wm. Hodges Sur., 330 ft. N of S line, 50 ft. W of E line ..... Drlg. salt 1,820 ft.

Yount Lee Oil Co.'s No. 23 Chambers County, Wm. Bloodgood Sur., 116.9 ft. S of N line and 347 ft. W of E line ..... Drlg. shale 1,259 ft.

Yount Lee Oil Co.'s No. 7 Phillips, offset Sun Oil Co.'s No. 18 Wilburn ..... Drlg. shale 3,190 ft.

Yount Lee Oil Co.'s No. 8 Phillips, Wm. Hodges Sur. .. Derrick.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 38 Moore, James Frazier Sur., 380 ft. E, 100 ft. S of No. 31 ..... No report.

RABBS RIDGE—FORT BEND COUNTY

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 16-A George, J. Rabb Sur., E of No. 9-A ..... Comp. 45 bbls. per hr.; ⅝-in. choke, 5,368 ft.

Humble O. & R. Co.'s No. 22-B Lockwood & Sharp, J. Rabb Sur. ..... Drlg. sand 5,227 ft.

Texas Co.'s No. 2 Sherman McCall, Samuel Kennedy Sur., 665 ft. N and 390 ft. W of SE cor. of lease .... Abd. 4,241 ft.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 4 Broussard & Orme, M. Dunman Sur., 129 ft. SW of No. 3 ..... Drlg. shale 3,220 ft.

Yount Lee Oil Co.'s No. 39 Cade, N. Fitzsimmons Sur., 1,000 ft. from W line, 530 ft. from S line of lease. Drlg. sand and shale 4,110 ft.

Yount Lee Oil Co.'s No. 2-B Cade, 170 ft. from N line, 100 ft. from E line of 40-ac. lease, N. Fitzsimmons Sur. ..... Drlg. hard sand 4,255 ft.

Yount Lee Oil Co.'s No. 2 Mathis, M. Dunman Sur., direct offset No. 1 Spencer ..... Derrick.

Yount Lee Oil Co.'s No. 20 Smith, 1,210 ft. from W line, 1,790 ft. from N line of 200-ac. tract, Dunman Sur. ..... Comp. 728 bbls., 4,858 ft.

Yount Lee Oil Co.'s No. 21 Smith, M. Dunman Sur., 360 ft. from W line, 1,485 ft. from N line of lease.. Drlg. hard sand 3,956 ft.

ARRIOLA—HARDIN COUNTY

Republic-Houston Oil Co.'s No. 6 Arriola fee, 2,150 ft S of N line, 5,050 ft. E of W line of lease, Arriola Sur. ..... T.D. 4,708 ft.; trying to sidetrack.

BATSON—HARDIN COUNTY

Danciger O. & R. Co.'s No. 2 Hooks, W. Donoho Sur., 330 ft. E of CWL, Blk. 24 ..... No report.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 106 Jordit ..... Drlg. sandy shale 831 ft.

Seismo Oil Co.'s No. 1 Caswell, 940 ft. S of NW cor. and 600 ft. from E line, H.B.B.&C. Sur. ..... No report.

SOUR LAKE—HARDIN COUNTY

Arila Pet. Co.'s No. 1 Sour Lake Bank, H.&T.C. Sur., NW cor. Blk. 11, Sec. 69 ..... No report.

Chemical Refining of Petroleum

By

V. A. KALICHEVSKY and B. A. STAGNER

Published June 16, 1933; size, 6 1-4 x 9 1-4; 451 pages

An authoritative book on a field which has long felt the lack of such a volume. In its review The Oil and Gas Journal comments:

"This book is a notable contribution to the literature on modern refinery practice. It fills a very definite need in a manner which refinery executives, chemists and technologists will be quick to appreciate; the reliable information it contains will be found invaluable for use in every refinery."

CONTENTS

- Treatment With Sulphuric Acid
- Sulphuric Acid Sludge From Petroleum Refining
- Treatment With Alkaline Reagents
- Sweetening Operations and Elimination of Elementary Sulphur
- Refining by Adsorption
- Use of Solvents in Refining
- Reduction of Total Sulphur in Light Petroleum Distillates
- Detonation and Antidetonants
- Oxidation and Reduction Reactions
- Inhibitors of Atmospheric Oxidation of Petroleum Products
- Gums in Cracked Petroleum Products
- Deterioration of Lubricating and Similar Oils
- Miscellaneous Refining Processes and Reagents
- Supplementary List of Patents on Petroleum Refining
- Special Tables and Charts
- Glossary of Terms
- Patent Index
- Author Index
- Subject Index

Price, $7.00 postpaid

Mail your order and check to the Book Department

THE OIL AND GAS JOURNAL

GOOSE CREEK—HARRIS COUNTY

Anderson et al's No. 1 Harral, Wm. Scott Sur., 600 ft. W and N from Humble's No. 1 Harral ..... S.D. 3,060 ft.; gumbo.

H. J. DeArman's No. 1 G. Adey, Wm. Scott Sur., 505 ft. from W line, 130 ft. from S line of lease..... T.D. 5,301 ft.; P.B. to 4,350 ft.; rigging up to pump.

Gulf Prod. Co.'s No. 13 Tabbs fee, Wm. Scott Sur. ... No report.

Humble O. & R. Co.'s No. 79 Simms-Smith, Wm. Scott Sur., 50 ft. from N line, 150 ft. from W line of most southerly NW cor. ..... Rigging up.

Sun Oil Co.'s No. 9 Wright, Wm. Scott Sur., 50 ft. from N line, 50 ft. from E line of lease ..... Drlg. shale 2,346 ft.

HUMBLE—HARRIS COUNTY

Texas Co.'s No. 47 Stevenson, J. B. Stevenson Sur., 859 ft. E, 457 ft. S of NW cor. Lot 1-A ..... Drlg. gumbo 490 ft.

MYKAWA—HARRIS COUNTY

Framer O. & G. Corp.'s No. 1 Minnetex Subd., Minnetex Subd., Wm. Lovett Sur. ..... Drlg. lime and shale 3,700 ft.

PIERCE JUNCTION—HARRIS COUNTY

Rio Bravo Oil Co.'s No. 15-A Settegast (W.O.), J. Kopman Sur. ..... T.D. 4,475 ft.; sidetracked 4,222 ft. to sand 4,298-4,346 ft.; set screen.

Rio Bravo Oil Co.'s No. 26-A Settegast, J. Kopman Sur. No. 44, 1,210 ft. N line, 750 ft. E line of "A" lease ..... T.D. 5,843 ft.; sidetracked 4,250 ft.; coring shale 4,881 ft.

TOMBALL—HARRIS COUNTY

Amerada Pet. Corp. and Stanolind O. & G. Co.'s No. 2 Fletcher, Joseph House Sur., 163 ft. from W line, 500 ft. from S line ..... Drlg. shale 4,270 ft.

Amerada Pet. Corp. and Stanolind O. & G. Co.'s No. 2 Nelson, Joseph House Sur. ..... Drlg. plug 5,571 ft.

Amerada Pet. Corp. and Stanolind O. & G. Co.'s No. 3 Otto Rudel, Joseph House Sur., 463 ft. from N line, 128 ft. from E line of 64-ac. tract ..... Drlg. shale 4,676 ft.

Humble O. & R. Co.'s No. 1-A Brautigan, J. Edwards Sur., 500 ft. from S line, 500 ft. from E line of lease. Comp. 144 bbls. dly.; 5,628 ft.

Humble O. & R. Co.'s No. 2 Emil Doege, C. Goodrich Sur., 300 ft. from E line, 466 ft. from S line of 90 acres ..... Derrick.

Humble O. & R. Co.'s No. 1 W. Hoffman, Joseph House Sur., 466 ft. W of E line of W. W. Baker tract and 318 ft. N of S line ..... Sand 5,577 ft.; cmtd. csg.

Humble O. & R. Co.'s No. 1 Hempel, J. N. Hooper Sur., 500 ft. from E line, 466 ft. from S line of 105 acres.. Comp. 2,000,000 ft. dry gas 5,574 ft.

Humble O. & R. Co.'s No. 1 Phillip Holderith, C. N. Pillot Sur., 466 ft. out of SE cor. of 90 acres..... Drlg. shale 4,512 ft.

Humble O. & R. Co.'s No. 2 L. B. Moody, J. H. Edwards Sur., 817 ft. S of No. 1 ..... Drlg. shale 950 ft.

Humble O. & R. Co.'s No. 1 Gus Petrick, J. N. Hooper Sur. "A" 372, 466 ft. out of NW cor. 160-ac. tract.. Drlg. shale 1,933 ft.

Humble O. & R. Co.'s No. 2 Reid, C. Goodrich Sur., 1,350 ft. from S line, 2,300 ft. from W line of tract.. Rig.

Humble O. & R. Co.'s No. 1-B Quilter, A. Senchal Sur., 2,100 ft. S of N line, 1,826 ft. E of W line of tract ..... Comp. 2,000,000 ft. dry gas 5,568 ft.

Skelly Oil Co.'s No. 1 Schultz, J. H. Edwards Sur., 456 ft. from S line, 404 ft. from E and W lines ..... Derrick.

Texas Co.'s No. 1 Sam Lewis, C. N. Pillot Sur., 466 ft. N 1 deg. W and 550 ft. N 89 deg. E of SW cor. of lease ..... Rig.

ESPERSON—LIBERTY COUNTY

General Crude Oil Co.'s No. 7 Davis (W.O.), Duncan Sur.. No report.

General Crude Oil Co.'s No. 18 Esperson, C. W. Fisher Sur., 400 ft. S of No. 7 (W.O.) ..... Drlg. shale 4,260 ft.

HULL—LIBERTY COUNTY

Gulf Prod. Co.'s No. 2-C R. C. Briggs, J. Devore Sur., 242 ft. W line, 50 ft. N line of lease ..... Derrick.

Gulf Prod. Co.'s No. 95 Phoenix, Jesse Devore Sur. .... Drlg. sticky shale 4,550 ft.

Houston Prod. Co.'s No. 5 Orgain, Jesse Devore Sur., 100 ft. S of No. 4 ..... Derrick.

Houston Prod. Co.'s No. 6 Orgain, Jesse Devore Sur., 250 ft. S of No. 4 ..... Drlg. sand and shale 4,322 ft.

Humble O. & R. Co.'s No. 34 Hooks-Guedry, Jesse Devore Sur., 443 ft. from W line, 50 ft. from S line of lease ..... Comp. 69 bbls. per day; 5,000 ft.

Humble O. & R. Co.'s No. 13 Hooks-Spell, Jesse Devore Sur., 50 ft. from S line, 150 ft. from E line of lease ..... Comp. 14 bbls. per hour; ¼-in. choke, 4,738 ft.

Liberty-Hull Oil Co.'s No. 3 McAlister, Jesse Devore Sur., 130 ft. from N line in center of lease E and W. Drlg. shale 2,326 ft.

Miramar Oil Corp.'s No. 3-B Phoenix, Jesse Devore Sur., 50 ft. from N line, 250 ft. from W line of lease ..... Sand 5,393 ft.

Sun Oil Co.'s No. 3-A Carr, Jesse Devore Sur., 196 ft. W of No. 2-A Carr ..... Drlg. sand and shale 4,708 ft.

Republic Prod. Co.'s No. 150 Dolbear, J. Devore Sur., 250 ft. E of No. 31 ..... Drlg. shale 4,755 ft.

Texas Co.'s No. 5 Barrow fee, J. Devore Sur., 533 ft. S, 150 ft. W of NE cor. of lease ..... T.A. 4,955 ft.

Texas Co.'s No. 6 Barrow fee, 383 ft. S, 150 ft. W from NE cor. of tract, Jesse Devore Sur. ..... Rig.

Yount Lee Oil Co.'s No. 7 Hooks Spell, Jesse Devore Sur., 100 ft. E of No. 5 ..... Rig.

Yount Lee Oil Co.'s No. 8 Hooks fee, Jesse Devore Sur., 150 ft. from NW line, 150 ft. from SW line of 5-ac. lease ..... Drlg. shale 4,650 ft.

CONROE—MONTGOMERY COUNTY

Adeltex Oil Co.'s No. 2 Llewelen, R. G. Hamlett Sur., 466 ft. N, 159 ft. W, SE cor. lease ..... No report.

American Liberty Oil Co.'s No. 1-C Harris Est., J. Davis Sur., 330 ft. from S line, 343 ft. from E line of lease ..... Comp. 10,000,000 ft. gas; ½-in. choke, 5,162 ft.

Gulf Coast Drlg. & Prod. Co.'s No. 20-A Keystone Mills, A. S. James Sur. ..... Shale 5,135 ft.; P.B. 5,020 ft.; comp. gas well.

Harrison & Abercrombie's No. 4 Alexander, John McHorse Sur., 356 ft. from E line, 425 ft. from S line of lease ..... Drlg. shale 2,410 ft.

Humble O. & R. Co.'s No. 15 Keystone Mills, A. Steele Sur., 1,096 ft. S of No. 28 and 975 ft. from No. 14.... Drlg. shale 978 ft.

Humble Oil & Ref. Co.'s No. 20 Keystone Mills, A. Steele Sur., 793 ft. W of No. 19 ..... Comp. 88 bbls. per hour; ½-in. choke, 5,126 ft.

Humble O. & R. Co.'s No. 23 Keystone Mills, A. Steele Sur., 1,200 ft. from E line, 750 ft. from S line of lease ..... T.D. 5,112 ft.; cmtd. csg.

Humble O. & R. Co.'s No. 15 Madeley, Ransom House Sur., 973 ft. SW of No. 7 and 869 ft. NE of No. 5.... Drlg. shale 5,060 ft.

Humble O. & R. Co.'s No. 16 Madeley, Ransom House Sur. ..... Shale 5,145 ft.; cmtd. csg.

Humble O. & R. Co.'s No. 48 Moore, Lemuel Smith Sur., 933 ft. SW of No. 39 ..... Shale 5,127 ft.; cmtd. csg.

Humble O. & R. Co.'s No. 2 A. Morehead, Trevathan Sur.. Shale 5,129 ft.; cmtd. csg.

Humble O. & R. Co.'s No. 28-A South Tex. Dev. Co., T. C. Howell Sur., 1,450 ft. S line and 9000 ft. W line. Drlg. sand 5,100 ft.

Humble O. & R. Co.'s No. 5-D South Tex. Dev., T. &N.O. Sur., 700 ft. E of No. 4-D ..... Comp. 78 bbls. per hour; ½-in. choke, 5,134 ft.

Humble O. & R. Co.'s No. 2-F South Tex. Dev. Co., C. A. West Sur., center of Lots 12 and 13 ..... Drlg. sand and shale 762 ft.

Mullendore et al's No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 5, center of 10-ac. tract ..... Drlg. shale 5,075 ft.

Pine Tree Oil Co.'s No. 1 South Tex. Dev. Co., T.&N. O. Sur. No. 12, 1,600 ft. W line, 810 ft. S line of Sur.. Sand 5,156 ft.

Sun Oil Co.'s No. 11 Keystone Mills, A. Steele Sur., 1,000 ft. S of No. 10, 871 ft. W of No. 7 ..... Shale 1,334 ft.; cmtd. 9⅝-in. csg. 1,331 ft.

Texas Co.'s No. 23 Mooey, Ransom House Sur., 1,332 ft. N 75° E and S 15° E 162 ft. from lower NW cor. of lease ..... Drlg. sand and shale 4,729 ft.

Tide Water Oil Co.'s No. 3 American Natl. Bank, Wilson Strickland Sur. ..... T.D. 5,066 ft.; cmtd. 7-in. csg. 5,054 ft.

Tide Water Oil Co.'s No. 33-A Lewis, C. B. Stewart Sur., 3,851⅓ ft. from N line, 1,581⅓ ft. from E line of lease ..... Drlg. sandy shale 3,719 ft.

Tide Water Oil Co.'s No. 34-A Lewis, C. B. Stewart Sur., 2,140 ft. from N line, 1,590 ft. from E line of lease ..... Drlg. shale and lime 3,460 ft.

Tide Water Oil Co.'s No. 35-A Lewis, C. B. Stewart Sur., 1,596 ft. W of E line, 4,985 ft. N of S line of lease ..... Drlg. shale and lime 4,271 ft.

Tide Water Oil Co.'s No. 32-B Lewis, C. B. Stewart Sur., 1,188 ft. W of E line, 1,497 ft. N of S line of lease ..... Drlg. shale 3,725 ft.

PORT NECHES—ORANGE COUNTY

Texas Co.'s No. 2 Orange Natl. Bank, Jacob Beaumont Sur., 1,538 ft. W and 200 ft. S of NE cor. of lease ... Cmtd. 13⅜-in. csg. at 1,267 ft.

Texas Co.'s No. 3-B Polk, 695 ft. N, 150 ft. S of NE cor. of N. Jacob Beaumont Sur. ..... Drlg. hard lime 5,513 ft.

LIVINGSTON—POLK COUNTY

Gist Oil Co.'s No. 1 Kingsbury County Holding Corp., A. Viesca Sur., 150 ft. N at R/A and 193 ft. E along S line of tract ..... Standing 4,242 ft.

Harrison & Abercrombie's No. 3 Carter, Mary C. Swinney Sur., 150 ft. out of NW cor. of lease ..... Moving in rig.

Polk County Oil Co.'s No. 3 Davis-Holmes, A. Viesca Sur., 1,263 ft. SW line, 1,266 ft. SE line ..... Gumbo 625 ft.; cmtd. 10-in. csg. 610 ft.

GRETA—REFUGIO COUNTY

Atlantic Oil Prod. Co. et al's No. 5-A J. J. O'Brien, 933 ft. E of No. 3-A, 466 ft. S of N line ..... Drlg. shale 5,556 ft.

Blanco Oil Co.'s No. 4-A J. J. O'Brien, M. J. Ximines Sur., 466 ft. from N line, 910 ft. from E line of 107-ac. lease ..... No report.

Floboots Oil Corp.'s No. 1 M. C. Bauer, 330 ft. N line, 1,724 ft. from W line, J. M. Ximines Sur. ..... No report.

Humble O. & R. Co.'s No. 3 Fannie Heard, 825 ft. E of most northerly NW cor. of lease and 466 ft. S of most northerly line at R/A, N. S. Crunk Sur... Derrick.

Humble O. & R. Co.'s No. 2 J. F. B. Heard, J. H. Peoples Sur., 466 ft. S line, 933 ft. E of No. 1.... Sand 4,380 ft.; running 7-in. csg. to test.

Humble O. & R. Co.'s No. 1 Wilder, 466 ft. S line, 313 ft. E line, J. T. McGrew Sur. ..... Drlg. shale 5,297 ft.

Edwin M. Jones' No. 6-A O'Brien, N. S. Crunk Sur., 1,399 ft. from E line of, 466 ft. from S line of tract..... No report.

Edwin M. Jones' No. 7-A O'Brien, N. S. Crunk Sur.... Derrick.

Nesral Oil Co.'s No. 1 V. E. Heard, 466 ft. N line, 266 ft. W line, M. J. Ximines Sur. ..... T.D. 6,010 ft.; no report.

Nesral Oil Co.'s No. 3 W. Heard, 710 ft. W line, 1,510 ft. N line of lease, M. J. Ximines Sur. ..... Drlg. shale and lime 6,020 ft.

United Prod. Co.'s No. 2-A Lambert, E. W. Harper Sur., 466 ft. out of N cor. of lease ..... Moving in rig.

United Prod. Co.'s No. 6 Lambert, C. S. Hardwick Sur., Blk. 2, 2,466 ft. from N line, 506 ft. from E line... Comp. producer 4,392 ft.; csg. pressure 800 lbs.; tubing pressure 150 lbs.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 8 Janner, J. W. Perry Sur., 300 ft. SE of No. 7, 150 ft. SW of the creek ..... Reaming to set csg.; T.D. 1,110 ft.

Sun Oil Co.'s No. 3 Schermer, N. Clay Sur., 330 ft. NW, 330 ft. SW line of lease ..... Drlg. shale 2,645 ft.

SOUTH LOUISIANA FIELDS

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 18 Watkins, 2,515 ft. S, 650 ft. W of NE cor. Sec. 18-12s-12w ..... Derrick.

CAMERON MEADOWS—CAMERON PARISH

Burton-Sutton Oil Co.'s No. 3 School Land, 155 ft. N and 2,974 ft. E of SW cor. of Sec. 16-14s-13w ..... Derrick.

Humble O. & R. Co.'s No. 5 Cameron Meadows, 2,260 ft. W, 28 ft. S of NE cor. Sec. 21-14s-14w..... Drlg. shale 2,756 ft.

Humble O. & R. Co.'s No. 6 Cameron Meadows, 1,866 ft. W, 150 ft. S of NE cor. Sec. 21-14s-13w ..... Drlg. sand and shale 550 ft.

EDGERLY—CALCASIEU PARISH

Union Sulphur Co.'s No. 1 Hunter, 210 ft. E, 1,260 ft. N of SW cor. SE Sec. 21-9s-11w ..... Drlg. sandy shale 5,125 ft.

Union Sulphur Co.'s No. 1 La. Prairie Narrone, 1,061 ft. N, 250 ft. W of SW cor. SW Sec. 21-9s-11w..... Drlg. gumbo 1,646 ft.

Yount Lee Oil Co.'s No. 1 Sulphur Mining Co., 150 ft. S, 300 ft. W, NE cor. Sec. 23-9s-11w ..... Drlg. shale 8,256 ft.

CHOCTAW—IBERVILLE PARISH

Standard Oil Co. of La.'s No. 4 Gay, 2,350 ft. S, 175 ft. E of NE cor. Sec. 52-9s-11e ..... Derrick.

GARDEN ISLAND—PLAQUEMINES PARISH

Texas Co.'s No. 10 Garden Island ..... T.D. 1,875 ft.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 6 Alliance Trust, 667 ft. E, 1,787 ft. S line of lease, Sec. 34-11s-1w..... Drlg. sandy shale and lime 4,368 ft.

Pure Oil Co.'s No. 5 Mulvey, 500 ft. from No. 2 Mulvey, in line with Nos. 1 and 2 ..... Drlg. shale, lime streaks and boulders 5,445 ft.

HACKBERRY—CAMERON PARISH

Gulf Ref. Co.'s No. 13-A Irwin ..... Drlg. sand and shale 2,235 ft.

Pop Oil Co.'s No. 1 Yount Lee, 3,996 ft. W, 100 ft. N of SE cor. Sec. 19-12s-10w ..... To pump 4,182 ft.

Red Kelly Oil Co.'s No. 1 Duhon, 200 ft. S, 500 ft. E, NW cor. Sec. 27-12s-10w ..... Drlg. sand 1,979 ft.

Texas Co.'s No. 11-B State ..... Drlg. shale 5,353 ft.

Union Sulphur Co.'s No. 1 Barbee est., 1,720 ft. N line, 320 ft. E of SW cor. Sec. 12-12s-10w..... Tested S.W. 7,598 ft.; pulling screen.

Union Sulphur Co.'s No. 7 Humble lease, 1,010 ft. N, 661 ft. E of SW cor. Sec. 12-12s-10w ..... T.D. 6,542 ft. in salt; P.B. 5,447 ft.

Yount Lee Oil Co.'s No. 11 Gulf land, Sec. 14-12s-10w... Rig.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Barnsdall Oil Co.'s No. 2 Fontenot, 990 ft. N and 330 ft. E of SW cor. of Sec. 7-9s-6w ..... Drlg. sticky shale 4,560 ft.

Barnsdall Oil Co.'s No. 4 Fontenot, 330 ft. N, 330 ft. W out of SE cor. 80-ac. lease, Sec. 7-9s-6w..... Derrick.

Magnolia Pet. Co.'s No. 2 James Bowman, 660 ft. W, 330 ft. N of SE cor. NE SW Sec. 12-9s-7w..... Derrick.

Shell Pet. Corp.'s No. 1 Arcoln, 330 ft. out of NW cor. 80-ac. tract, Sec. 7-9s-6w ..... Drlg. shale and lime 6,860 ft.

Shell Pet. Corp.'s No. 5 A. D. Fontenot, 330 ft. out of SE cor. W½ SW Sec. 7-9s-6w ..... Coring sandy shale 6,477 ft.

Shell Pet. Corp.'s No. 6 Fontenot, Sec. 7-9s-6w, 900 ft. N, 330 ft. W of SE cor. of lease ..... Derrick.

Shell Pet. Corp.'s No. 3 E. O. Stafford, 330 ft. from N and E lines of W½ NW Sec. 18-9s-6w ..... Rigging up.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 13 Houssiere-Latrielle, Sec. 47-9s-3w, 300 ft. E of No. 12 ..... Drlg. shale 7,248 ft.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 10 L.L.&E., 4,543 ft. S, 502 ft. W of NW cor. Sec. 30-21s-20 ..... Drlg. rock 2,767 ft.

Texas Co.'s No. 22 State-Lake Barre, 150 ft. northerly from No. 18 ..... Drlg. sand 6,697 ft.

Texas Co.'s No. 20 State-Lake Barre, 392 ft. northerly from No. 22, Sec. 30-21s-20e ..... Anhydrite 1,368 ft.; no report.

LEESVILLE—LAFOURCHE PARISH

O'Brien et al's No. 1 Williams, 95 ft. W of E line in center N and S of Lot 2, Sec. 26-21s-22e ..... Derrick.

Texas Co.'s No. 8 L.L.&E., 2,321 ft. due S, 450 ft. W from NE cor. Sec. 27-21s-22e ..... Salt 4,503-4,666 ft.; abd.

Texas Co.'s No. 10 L.L.&E., 3,500 ft. due S, 375 ft. due W of NE cor. Sec. 27-21s-22e ..... Salt 3,884-96 ft.; cmtd. 3,365 ft.; comp. 1,160 bbls. P.L. oil; ¾-in. choke.

Texas Co.'s No. 11 L.L.&E., 2,921 ft. S, 1,560 ft. W of NE cor. Sec. 27-21s-22e ..... Rig.

LOCKPORT—CALCASIEU PARISH

Magnolia Pet. Co.'s No. 7 Farquaher, 330 ft. S, 174 ft. W of NE cor. SW NE Sec. 8-10s-9w ..... Derrick.

Magnolia Pet. Co.'s No. 11 Bordages, 660 ft. N, 490 ft. W of SE cor. NE NE Sec. 8-10s-9w ..... D.S. test 6,691-97 ft. unsuccessful; T.D. 6,697 ft.

Magnolia Pet. Co.'s No. 4-A Watkins fee, 685 ft. E, 200 ft. N of SW cor. NW NE Sec. 9-10s-9w..... Drlg. shale 7,003 ft.

Union Sulphur Co.'s No. 1 Farquaher, 200 ft. S and W lines, NE cor. SW SE Sec. 36-12s-10w, 2-ac. tract .... Drlg. shale 7,504 ft.

Union Sulphur Co.'s No. 2 Moss (W.O.), 350 ft. S, 210 ft. W of NE cor. NW SE ..... Drlg. shale 6,361 ft.

PORT BARRE—ST. LANDRY PARISH

Gulf Ref. Co.'s No. 5 Wilson-Cockran, 400 ft. N, 910 ft. E of No. 2, Sec. 4-6s-5e ..... No report.

Texas Co.'s No. 17 Botney Bay, 1,800 ft. S 8 deg. W, 600 ft. N 82 deg. most southern NE 560 deg. tract, Sec. 4-6s-5e ..... Derrick.

Texas Co.'s No. 19 Botney Bay ..... No report.

Texas Co.'s No. 1 Perkins, 2,501 ft. S, 1,003 ft. E of NW cor. Sec. 21-6s-5e ..... Drlg. salt 4,592 ft.

SORRENTO—ASCENSION PARISH

Union Sulphur Co.'s No. 3 Lacy White Frank, 1,175 ft. N, 1,615 ft. W of SE cor. Sec. 16-10s-4e ..... Drlg. salt 5,575 ft.

Union Sulphur Co.'s No. 25 United Land ..... Tested S.W. 5,744 ft.; pulling screen.

STARKS—CALCASIEU PARISH

Gulf Ref. Co.'s No. 34 Lutcher-Moore, 1,313 ft. N, 400 ft. E of SW cor. Sec. 19-9s-12w ..... Drlg. gumbo 1,520 ft.

Union Sulphur Co.'s No. 4 Industrial Lbr. Co., 2,254 ft. from W, 2,116 ft. from S line, NE cor. Sec. 30-9s12w. Drlg. shale 4,010 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 787 fee, 119 ft. N, 1,632 ft. W of C Sec. 29-9s-10w ..... Pulling screen 4,923 ft.

Union Sulphur Co.'s No. 788 fee, 602 ft. S, 1,309 ft. W. of C Sec. 29-9s-10w ..... Tested S.W. 5,188 ft.

Union Sulphur Co.'s No. 790 fee, 929 ft. S and 802 ft. W of center of Sec. 29-9s-10w ..... Hard lime 4,984 ft.; no report.

Union Sulphur Co.'s No. 791 fee, 529 ft. N, 907 ft. E of SW cor. Sec. 33-10s-12w ..... Drlg. shale 3,720 ft.

Union Sulphur Co.'s No. 792 fee, 2,103 ft. N, 703 ft. E of C Sec. 9-9s-10w ..... Shale and lime 1,686 ft.; no report.

Union Sulphur Co.'s No. 1 Noble, 1,745 ft. S, 150 ft. W of NE cor. Sec. 30-9s-10w ..... Spudded.

Union Sulphur Co.'s No. 1 Bernard Ulrich, 75 ft. out of SW cor. Sec. 19-9s-10w ..... Spudded.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 12 Yount Lee fee, 300 ft. S of No. 11, in line with Nos. 9 and 11, Sec. 13-13-3w..... T.D. 4,520 ft.; reaming to set csg.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 8 Wilbert, 717 ft. N 60 deg. 30 min. E from SE of Lot 2 of Fractional Sec. 9, in Sec. 1-11s-12e ..... Drlg. sandy shale and boulders 4,451 ft.

VINTON—CALCASIEU PARISH

Gulf Ref. Co.'s No. 9 Gardner, 572 ft. E, 150 ft. N, of SW cor. SE NE Sec. 33-10s-12w ..... R.U. to pump 3,211 ft.

Gulf Ref. Co.'s No. 72 Gardner-Noble-Gray, 643 ft. E, 50 ft. S of NW cor. NE SE Sec. 33-10s-12w..... Drlg. sand 1,835 ft.

Marrs McLean's No. 16 Gray, 426 ft. N, 656 ft. E of SW cor. Sec. 33-10s-12w ..... Set screen 1,872 ft.; to pump.

Tri-Oil Co.'s No. 1 Matilda Gray, 28 ft. W, 35 ft. N, of SE cor. NE SW NE Sec. 33-9s-12w ..... Spudded.

Wilson Broach Co.'s No. 13 Wilson strip, 50 ft. N and 907 ft. E of SW cor. of Sec. 33-10s-12w ..... Tested S.W. 2,820 ft.

Union Sulphur Co.'s No. 1 Vincent ..... Drlg. heaving shale 5,914 ft.

Wilson Broach's No. 14 Wilson Strip, 50 ft. N, 643 ft. E of SW cor. SE NE Sec. 33-10s-12w..... No report.

Vinton Pet. Co.'s No. 3 Gordon, Sec. 34-10s-12w, 209 ft. from S line, 50 ft. from W line of 2-ac. tract,.. Spudded.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

R. R. Mitchell's No. 1 H. Schlerda, J. F. Fitzgibbons Sur., 300 ft. out NE cor. 96-ac. tract ..... Location.

BRAZORIA COUNTY

Danciger O. & R. Co.'s No. 3-A Hunt, 2,100 ft. from E, 2,000 ft. from S lines of Hunt's 1,000-ac. tract in W. C. Carson Sur. ..... Cmtd. 12-in. csg. at 400 ft.; W.O.C.

Danciger O. & R. Co.'s No. 1 L. Williams, 700 ft. NE line, 726 ft. SE line of 180-ac. tract, W. C. Carson Sur. ..... T.D. 6,770 ft.; cmtd. 7⅝-in. csg. 6,734 ft.

Harrison & Abercrombie's No. 1 M. D. Howe, 992 ft. W line, 330 ft. N line, Blk. 18, Thomas Spraggins Sur. ..... Cmtd. 13-in. csg. at 1,148 ft.

Shell Pet. Corp.'s No. 2 Haury (Danbury), H.T.&B. R.R. Sur., 720 ft. SE of No. 1 Blakely-Winston..... Drlg. hard lime and shale 4,787 ft.

West Len Oil Co.'s No. 1 Settegast, W. C. D. Hall Sur., 4,700 ft. from SW line, 1,041 ft. from NW line of survey ..... Drlg. shale and lime 2,600 ft.

BRAZOS COUNTY

H. Elliott et al's No. 1 W. F. Odom, near center of 379-ac. tract in SW cor. of Isaac Curll Sur. ..... Cmtd. surface csg.

Liner et al's No. 1 Peters, 300 ft. SE line, 300 ft. SW line of E. V. Peter fee, G. Powell Sur. ..... Derrick.

F. H. Scott's No. 1 Klintworth, I. Curd Sur., 300 ft. from N line, 400 ft. from E line ..... T.D. 1,487 ft.; gas sand 1,393-1,420 ft.; standing.

COLORADO COUNTY

Humble O. & R. Co.'s No. 1-A O. M. Powell, I.&G.N. Sur. No. 44, 150 ft. E of W line, 600 ft. N of S line of lease ..... Drlg. shale 3,595 ft.

FORT BEND COUNTY

O'Connor Dome Oil Co.'s (was A. N. Phillips et al's) No. 1 Grigar, 2,150 varas E line, 1,550 varas N line, J. S. O'Connor Sur. ..... Shale 3,905 ft.; S.D.

J. P. White's No. 1 Wing, B. Osborne Sur., 2,000 ft. from N, 4,000 ft. from E line of tract ..... Standing 750 ft.

GRIMES COUNTY

Clark & Dodd's No. 1 Murry, 150 ft. W line, 300 ft. S line, Anderson Sur. ..... No report.

Cambrian Oil Co.'s No. 1 W. V. Sangster, John Moore Sur., 300 ft. out of most westerly NW cor. of 218-ac. tract ..... Derrick.

Foster et al's No. 1 Quinn, 7,100 ft. from W line, 3,900 ft. from N line of S. F. Austin Sur. ..... T.D. 3,825 ft.; P.B. 3,200 ft.

H. C. Ratcliff's No. 1 Fulgham, A. Tuttle Sur., 600 ft. N line, 540 ft. W line of lease ..... Derrick.

O. C. Rush's No. 1 J. C. League, V. Sanders Sur., 165 ft. from N line, 455 ft. from W line ..... No report.

HARRIS COUNTY

Golding & Murchinson's No. 1 Clappert, W.C.R.R. Sur., Blk. 4, Sec. 9, 1,350 ft. from E line, 330 ft. from N line ..... Coring sand 2,605 ft.

J. A. Hodges' No. 1 Scott, 200 ft. S, 900 ft. W of intersection of Crosby Huffman, F. Rankin Sur. ..... S.D. 4,800 ft.

G. L. McCarthy et al's No. 1 Weston, Wm. Jones Sur., 336 ft. E, 161 ft. S of NW cor. Blk. 9, W. A. Payne Subd. ..... Rig.

HOUSTON COUNTY

Thompson et al's No. 1 E. W. Harrison, 330 ft. out E cor. 130-ac. tract, J. Masters, Sr., Sur. ..... No report.
Murmac Oil Co.'s No. 1 G. L. Murray & Son, John Durst Sur. ..... No report.

JACKSON COUNTY

Atkins & O'Neil's No. 1 Ward (Davis), C Lot 93, I.&G.N. Sur. No. 18, Blk. 8 ..... Moving in.
Encio Gas Co.'s No. 1 Toney, 150 ft. out of NW cor. of Toney's 1,064-ac. tract in Raymor Musquiz Sur. .. Location.

JEFFERSON COUNTY

Lucky Strike Oil Co.'s No. 1 Walker, D. Easley Sur., 2,100 ft. N, 1,400 ft. E of NW cor. of Lot No. 13. No report.
Sun Oil Co.'s No. 1 H. Long, 1,500 ft. N line, 990 ft. E line of lease ..... Drlg. shale 5,542 ft.

LIBERTY COUNTY

Brown & Wheeler's No. 1 Goldberg, Lot 14, J. Eldridge Sur. ..... Drlg. sand and shale 5,275 ft.
Gulf Prod. Co.'s No. 2 Kirby, John Pleasants Sur., 1,866 ft. S of No. 1 ..... Reaming 5,879 ft.
Gulf Prod. Co.'s No. 1 Grogan, Clayton Harper Sur., 1,500 ft. from E line and 466 ft. from S line ..... Drlg. 3,000 ft.
Miramar Oil Corp.'s No. 1 Crowe & Jacobs, H.&T.C. Sur. 21, 950 ft. W of E line, 110 ft. N of S line of 300-ac. tract ..... No report.

MATAGORDA COUNTY

H. E. Clark et al's No. 1 Turner, M. Cummings Sur., 4,900 ft. NE line and 3,800 ft. SE line ..... T.D. 4,373 ft.; abd.
Continental Oil Co.'s No. 1 Boker, 400 ft. out of SW cor. Lot 17, Robbins & Middle Subd., J. W. Criswell Sur. ..... T.D. 6,564 ft.; abd.
Skelly Oil Co.'s No. 1 Cobb, M. Cummins Sur., 434 ft. from E, 1,506 ft. S of F. G. Cobb's 167-ac. tract ... T.D. 7,186 ft.; P.B. to 7,045 ft.; to test.
United North & South Dev. Co.'s No. 1 Unit 6 (No. 2 Stoddard), 25 ft. each way out of NW cor. of Lot 19, Buckeye townsite ..... Drlg. shale 8,835 ft.

MONTGOMERY COUNTY

Baker et al's No. 1 Benker, D. James Sur. ..... T.D. 4,921 ft.; P.B. to 4,909 ft.; tested S.W.; S.D.
Steen Drlg. Co.'s No. 1 Long Bell Lbr. Co., 440 ft. S and E from NW cor. of Wilson Barker Sur. ..... Coring 3,520 ft.
Sutton & Hawkins' No. 2 Foster est., 90 ft. E of No. 1, A. M. Del Garza Sur. ..... No report.

NACOGDOCHES COUNTY

James W. Rich's No. 1 Unknown, J. L. Ewing Sur., 2,777 ft. from W line, 5,208 ft. from S line of survey .. No report.

ORANGE COUNTY

Texas Louisiana Oil Co.'s No. 1 Starks, 2,450 ft. N of NW cor. M. Delano Sur. 68, 10,500 ft. E at R/A. .. T.D. 1,197 ft.; standing.

POLK COUNTY

Dick Schwab's No. 2 Kirby & West, 660 ft. from W line, 893 ft. from S line of lease in G. S. Thomas Sur. ..... Pulling screen to core deeper; T.D. 4,856 ft.

REFUGIO COUNTY

Humble O. & R. Co.'s No. 11 O'Connor, Powers & Hewitson Sur., 301 ft. S, 833 ft. E of No. 10 ..... T.D. 3,174 ft.; P.B. 3,170 ft.; W. O.C.

SAN AUGUSTINE COUNTY

Fidelity Exploration Co.'s No. 1 Bryan & Flourney, 1,926 ft. from N and 725 ft. from E lines of Sec. 14, S.P.R.R. Sur. ..... Moving in rig.

SAN JACINTO COUNTY

Piedmont Oil Co.'s No. 2 Foster, 330 ft. each way out of NE cor. Geo. Taylor Sur. ..... Pits dug.
Weaver & Crimm and Shell Pet. Corp.'s No. 1 Delta Land & Lbr. Co., Earl Lusk Sur. ..... Coring sand and shale 5,152 ft

VICTORIA COUNTY

Houston Oil Co.'s No. 1 Victor Urban, R. Manchola Sur., 330 ft. from NW and SW lines of 161.37-ac. tract ..... Drlg. shale 1,450 ft.
Markle et al's No. 1 Dunlap, Manuel Zepeda Sur., 9,550 ft. along NW line of survey from most northerly NE cor. and 1,475 ft. SE at R/A ..... Spudded.
Texas Co.'s No. 6-A McFaddin, A. J. Gray Sur., 5,600 ft. from NE line, 250 ft. from SE line ..... T.D. 3,049 ft.; S.D.; waiting on drill pipe.
Texas Co.'s No. 7-A McFaddin, 250 ft. due N of No. 7, A. J. Gray Sur. ..... T.D. 1,597 ft.; standing with 125 lbs. pressure.
Texas Co.'s No. 8 McFaddin, A. J. Gray Sur., 6,600 ft. N of S line, 1,383 ft. from E line of NE cor. ..... D.S. stuck 3,609 ft.; cut pipe to 2,798 ft.; P.B. to 1,825 ft.

WHARTON COUNTY

Monarch Oil Co.'s No. 1 Schateck, 150 ft. each way out of SW cor. G. W. Reynolds Sur. ..... Standing 1,475 ft.
Nabers et al's No. 1 Lurker, 210 ft. out of SE cor. of N½ SW Sec. 58, E.T.R.R. Sur. ..... T.D. 5,026 ft.; washing over; D.S. stuck 2,914 ft.
Pure Oil Co.'s No. 2 Stewart, Morris & Cummings Sur., Sec. 25, 990 ft. out of SW cor. of 160 acres. Derrick.
Pure Oil Co.'s No. 1 A. J. Wilder, T. W. Hurd Sur., 509, 2,675 ft. SE, 1,690 ft. NE from W cor. Sec. 28. . T.D. 7,614 ft.; D.S. stuck 6,800 ft.
Pure Oil Co.'s No. 1 W. H. Lancaster, Morris & Cummings Sur., Sec. 33, 1,650 ft. NW, 1,600 ft. SW of E cor. of section ..... Fishing drill stem 7,142 ft.
Pure Oil Co.'s No. 1 Wallace Houston, 858 ft. SE of NW line, 1,490 ft. NE of SW line, Sec. 28, (T. W. Heard Sur.) ..... T.D. 6,457 ft.; cutting out 5-in. csg.
Pure Oil Co.'s No. 1 Isaac Weaver, J. M. Brownson Sur., Sec. 22, 1,850 ft. out of N cor. of section ..... Drlg. shale and sandstone 6,276 ft.

SOUTH LOUISIANA

ACADIA PARISH

Mills Bennett Prod. Co.'s No. 1 Riverside, 1,400 ft. S, 467 ft. E of NW cor. Sec. 61-9s-2w ..... Drlg. shale 7,561 ft.
Superior Oil Co.'s No. 1 P. O. Hernandez, 990 ft. W, 990 ft. S of NE cor. SE Sec. 34-8s-3e ..... Drlg. shale 7,450 ft.

ASCENSION PARISH

Turnbull & Irwin's No. 1 Community (Darrow) ..... Drlg. gumbo 3,710 ft.

BEAUREGARD PARISH

Humble Oil & Ref. Co.'s No. 1 Long Bell, 200 ft. E of W line and 2,640 ft. S of N line of Sec. 11-5s-7w ..... Cmtd. 13⅜-in. surface csg. 1,925 ft.

CALCASIEU PARISH

Gulf Ref. Co.'s No. 1 Sweet Lake Oil Co., 660 ft. N, 330 ft. E of SW cor. Sec. 29-10s-5w ..... Drlg. shale 8,385 ft.
Union Sulphur Co.'s No. 1 Barbe, 2,681 ft. W, 2,647 ft. S of NE cor. Sec. 1-9s-8w ..... Drlg. hard shale and lime 7,266 ft.

JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 2 Devilbiss, 1,850 ft. S, 250 ft. W of NE cor. Sec. 14-9s-4w ..... T.D. 8,423 ft.; reset screen and swabbing.
Shell Pet. Corp.'s No. 1 Kratzs, 660 ft. S, 330 ft. W of NE cor. NW Sec. 13-9s-4w ..... Drlg. sandy shale 5,908 ft.
Geo. W. Strake's No. 1 Pedigrew, 200 ft. out of SW cor. Sec. 9-9s-6w ..... Drlg. shale 4,220 ft.

LAFOURCHE PARISH

Barnsdall Oil Co.'s No. 1 Harang, Lot 4, Twp. 17s-20e. . T.D. 7,195 ft. in salt; P.B. to 6,300 ft.; drld. to 6,954 ft.; S.D.

ST. BERNARD PARISH

Southern Sulphur Co.'s No. 1 Lake Lery, 400 ft. W, 500 ft. N, SW cor. Sec. 28-13s-15e ..... No report.

ST. LANDRY PARISH

H. H. Hotchins Lbr. Co.'s No. 1 Whiteman Lbr. Co., 250 ft. out of SW cor. NE Sec. 15-5s-6e ..... No report.

ST. MARTIN PARISH

Standard Oil Co. of Kansas' No. 1 E. B. Hopkins, Sec. 33-10s-6e ..... Shale 7,503 ft.; P.B. to 6,010 ft.

TERREBONNE PARISH

Texas Co.'s No. 10 State-Caillou Island ..... T.D. 5,653 ft.; sand rock; D.S. stuck.
Texas Co.'s No. 2 State-Four Island Bayou ..... Drlg. shale 6,458 ft.
Texas Co.'s No. 7 State Bay-St. Elaine, 3,900 ft. N, 2,300 ft. E of SW cor. Sec. 8-22s-18e ..... Drlg. shale 3,103 ft.
Texas Co.'s No. 10 State-Lake Pelto, 420 ft. N, 1,246 ft. E, SW cor. Sec. 4-23s-18e ..... Drlg. hard sand 5,274 ft.

VERMILLION PARISH

Hammill & Smith's No. 1 Faulk, 600 ft. S, 400 ft. E of NW cor. Sec. 5-12s-3e ..... T.D. 8,015 ft.; abd.

VERNON PARISH

Robt. K. Williams, Jr.'s No. 1 Llano Del Rio, 1,185 ft. S, 1,000 ft. W of NE cor. Sec. 7-1n-9w ..... Rig

Wildcat Operations in Southwest Texas

(Continued from Page 72)

George L. O'Neill's No. 1 Neimann in Juan Montez Sur. No. 6 ..... T.D. 1,201 ft.; drlg.
J. W. Johnson's No. 1 Willow Springs, 150 ft. from N and W lines of lease in B. Munoz Sur. No. 151 .... T.D. 2,021 ft.; trying to recmt.; made salt wtr. and some oil.
Fred A. Perrenot's No. 1 Russell, 750 varas from NE line, 54 varas from NW line of 500-ac. tract in Rodriquez Sur. ..... T.D. 1,315 ft.; standing.
N. H. Price's No. 1 Barragan, 150 ft. from S and E lines of 60-ac. tract ..... T.D. 419 ft.; S.D.; to be comp. by H. E. Lewis.
N. S. Powell's No. 1 M. Sanner, 400 ft. from E line, 5,280 ft. from N line of 128-ac. tract in Ruis Sur. No. 47 ..... T.D. 325 ft.; drlg.
C. A. Smith's No. 1 Henry Lamb, 750 ft. from N and E lines of Lamb farm, in de la Garza grant ..... T.D. 912 ft.; drlg.

BLANCO COUNTY

Blanco Development Co.'s (McGee) No. 1 A. J. Dittmar, 1,320 ft. from S line, 150 ft. from W line of George Evans Sur. No. 58, 4 miles NW of Johnson City ..... T.D. 1,305 ft.; abnd. dry.
Rogers et al's (formerly Pedernales Pet. Corp.) No. 1 Lester, 550 ft. from N line, 6,100 ft. from W line of Antonio Bendrand Sur. ..... T.D. 500 ft.; drlg.

CALDWELL COUNTY

S. S. Cargill's No. 2 Damereau, 150 ft. from W line, 450 ft. from N line of D. Cooper Sur. ..... Location.
C. J. Webster O. & G. Co.'s No. 1 Robertson, 770 ft. S and E from NW cor. of 100-ac. tract in John A. Neill Sur. ..... Spudded in.
Whitfield et al's No. 1 Wilms, 160 ft. from S line, 3,100 ft. from E line of 165-ac. tract in Cornelius Grenshaw Sur. ..... T.D. 1,175 ft.; S.D.

COMAL COUNTY

Theo. Hicks et al's No. 1 Gruene, 435 ft. from NE line, 414 ft. from NW line of H. Foster Sur. No. 34, 3 mi. NE from New Braunfels ..... Spudded and standing.

DEWITT COUNTY

Humble O. & R. Co.'s No. 1 Kuester, 4,100 ft. from N line, 466 ft. from E line of lease in S.A.&M.G. R.R. Sur. No. 7 ..... T.D. 1,075 ft.; set 10-inch csg.; W.O.C.

DUVAL COUNTY

Buffalo-Texas Drlg. Synd., Inc.'s No. 1 Escobar, 700 varas from W line, 1,000 varas from N line of 930-ac. tract in Francisco grant ..... Rigging up.
Humble O. & R. Co.'s No. 2 Peters, 1,320 ft. from N line, 330 ft. from W line of Sur. No. 15 ..... Rigging up.
Louis Yeager's No. 1 Yeager, 694 ft. from W line, 1,527 ft. from S line of Sur. No. 38 ..... Location.

EDWARDS COUNTY

Love and Evans' No. 1 Steve Brown, 660 ft. from N and E lines of Sec. 66, G.W.T.&P.R.R. Sur., 15 miles W of Rock Springs ..... T.D. 3,002 ft.; moving in heavy rig.

FRIO COUNTY

Amerada Pet. Corp.'s No. 1 Frank Doering, 34 ft. from W line, 1,700 ft. from S line of Tract No. 7 in Marcia Louisa Carranza Sur. No. 302 ..... T.D. 6,453 ft.; testing gas volume after testing salt wtr. in Edwards 6,444-53 ft.
Humble O. & R. Co.'s No. 1 Woodward, 3,200 ft. from NE line, 1,200 ft. from SE line of 830-ac. tract in E. Poor Sur. ..... Rigging up.

GILLESPIE COUNTY

Powers et al's No. 2 Lindig, 12,700 ft. from S line, 1,333 ft. from W line of Maria Josephine Guerrera Sur. ..... Location.

GUADALUPE COUNTY

A. F. Barnhill's No. 3 F. A. Phillman, 1,300 ft. from N line, 152 ft. from E line of lease in L. Bollinger Sur. ..... T.D. 2,244 ft.; drlg. Buda.
M. W. Elser's No. 2 Wells, 1,700 ft. from S line, 200 ft. from W line of Blk. 3, Subd. 1, J. de la Baume Sur. ..... Location.
Trinity Drillers' No. 1 Ball, 330 ft. from NE and SE lines of 91-ac. tract in L. H. Peters Sur. ..... Location.

HAYS COUNTY

J. C. Crowder's No. 1 Burnett, 2,370 ft. from E line, 1,400 ft. from N line of tract in J. Ingram Sur. .... T.D. 430 ft.; set csg.

HIDALGO COUNTY

Chancellor & Hall's No. 1 Garcia, 150 ft. from W line of Porcion No. 42, and 150 ft. N of old Military Highway ..... T.D. 3,187 ft.; will deepen to 4,100 ft. to hold leases.
D. D. Oil Co.'s No. 1 Mrs. L. George, 330 ft. from N and W lines of 40-ac. tract in Share 13, Porcion 41.. Location.
McGinley's No. 1 Francisco B. Guerra, 300 ft. from N and E lines of 40-ac. tract in Share 12, Porcion 41. . T.D. 2,959 ft.; sands tested dry; drlg. deeper.
Shankle's No. 1 Garza, ¾ mile S from McGinley ..... Derrick.

JIM HOGG COUNTY

Clark & Cowden Drlg. Co.'s No. 3 E. Vela, 985 ft. from E line, 2,762 ft. from S line, Sec. 588 in El Peyote grant ..... T.D. 2,301 ft.; abnd. dry.
French Oil Co.'s No. 1 Gutierrez, 330 ft. from N line, 330 ft. from W line, Blk. 1, in Sur. No. 142, E from Alworth Pool ..... T.D. 250 ft.; drlg.
A. W. Majors' No. 1 M. Guerra & Son, 2,444 ft. from W line, 3,698 ft. from N line of Sur. No. 369, in SW part of county ..... Moving in rig.

JIM WELLS COUNTY

Plymouth Oil Co.'s No. 1 Cuero Cattle Co., 330 ft. from S and W lines of H.T.&B. Sur. No. 7, 2½ miles W from Alfred ..... Rigging up.
Rodney DeLange and W. C. McBride, Inc.'s No. 1 Driscoll, 8,000 ft. from most westerly W line, 330 ft. from most northerly S line of Los Jaboncillos grant. Rigging up.
C. H. Robertson's No. 1 C. Mull, 330 ft. N of N end of division line between Lots 4-A and 5-A of Seefelds farm lots, or 1,300 ft. from W line, 400 ft. from N line of Pointevant Sur. No. 205 ..... Heatly magnetometer location.

KARNES COUNTY

Campbell et al's No. 1 Ira Coats, 330 ft. from S and E lines of 260-ac. tract in Carlos Martinez Sur. .... T.D. 2,552 ft.; S.D.
C. J. Webster's No. 1 J. B. Cannon, 1,140 ft. from N line, 250 ft. from E line of 80-ac. tract in Lambrano Sur. ..... T.D. 1,790 ft.; standing; may deepen to Yegua.

KENDALL COUNTY

A. P. Pierce's No. 1 Werner, in SW cor. of 40-ac. tract 150 ft. from S and W lines, in J. F. Torrey Sur. .... T.D. 992 ft.; standing.

W. E. Waldrip's No. 1 Charles Meckel, 300 ft. from E line, 3,300 ft. from S line of Thos. J. Sweeney Sur. No. 10 ..... T.D. 415 ft.; waiting for csg.

KERR COUNTY

G. F. Schreiner's No. 3 Love, 1,420 ft. from W line, 1,260 ft. from S line of Sur. No. 1,594 ..... Location.
Van Duyn & Moore's No. 1 Nowlin, 2,900 ft. from E line, 2,200 ft. from N line of Jas. R. Bettner Sur. No. 99 ..... T.D. 1,040 ft.; standing.

KLEBERG COUNTY

Harry Clark's No. 1 V. J. Kivlin, 360 ft. from E line, 400 ft. from S line of Sec. 39, Blk. 8, Kleberg Town & Improvement Co. Sur. ..... T.D. 2,050 ft.; S.D.

LEE COUNTY

H. A. Sherlack's No. 1 Otto, 736 ft. from NW line, 1,310 ft. from NE line of 57.5-ac. tract in Thomas Morrow Sur. ..... Rigging up.

LIVE OAK COUNTY

H. Coquat et al's No. 1 Burgess, 990 ft. from W line of Sec. 77, 32 ft. from N line of Simmons Subd. in farm tract No. 3,487 ..... T.D. 2,645 ft.; coring for Pettus sand.
Rodney DeLange's No. 1 T. E. Nelson, 660 ft. from N and W lines of 40-ac. tract in G. Braba Sur. ..... Set surface csg.
J. H. Durbin's No. 2 Marbach, midway between NW line and SE line of 423.3-ac. tract and 850 ft. SW line of S. Hays Sur. ..... T.D. 280 ft.; drlg.
W. P. Howard's No. 2 Nichols, 150 ft. from W line, 2,640 ft. from N line of Subd. "B," or 4,450 ft. from W line, 2,640 ft. from N line of tract in Louis Ayres Sur. ..... T.D. 1,315 ft.; in sand; set csg.
Loma Oil Co.'s No. 1 Reiffert, 300 ft. from NW line, 1,100 ft. from SW line of 130-ac. tract, in Stephen Hays Sur. ..... T.D. 1,100 ft.; coring.
Marine Oil Corp.'s No. 1 J. B. Dunning, 4,500 ft. from E line, 150 ft. from N line of 462-ac. tract in Maria Bridget Kiolin Sur. ..... T.D. 2,700 ft.; drlg.
Stuart Mossman's No. 1 W. J. Armstrong, 2,970 ft. from S line, 330 ft. from W line of 269-ac. tract in Henry Sur. ..... Abnd. dry; depth later.

MAVERICK COUNTY

C. L. Mahoney's No. 1 Wyche, 150 ft. from S line, 300 ft. from W line of 453-ac. tract in Sec. 20..... T.D. 340 ft.; S.D.

McMULLEN COUNTY

Armoil Prod. Co.'s No. 1 Kate Martin, 1,470 ft. from SE line, 1,470 ft. from SW line of H.T.&B. Sur. No. 9 ..... T.D. 2,023 ft.; standing.
Two Rivers Oil Co.'s No. 2 Two Rivers Ranch, 330 ft. from W line, 100 ft. from N line of Sec. 64, of Two Rivers Ranch Subd. ..... T.D. 712 ft.; reaming.
Rowan and Hope's No. 1 Hagist, 330 ft. from N line, 1,650 ft. from E line of S½ of Sur. No. 14 ..... Moving in rig.
Snider, Whisenant & Trenchard's No. 1 Bremer, 330 ft. from S and E lines of Blk. 15 of Borcher's Subd., 2 miles SW of Calliham ..... T.D. 1,204 ft.; abnd.
C. C. Shumway's No. 4 Shiner, 330 ft. from W line, 660 ft. from N line of SE Sec. 38, Shumway's Subd., Shiner ranch ..... Rigging up.

MEDINA COUNTY

O. R. Framme's No. 1 E. Boelke, 987 ft. from N line, 600 ft. from E line of 102-ac. tract in S. Huth Sur. No. 10 ..... T.D. 1,232 ft.; topped Georgetown.
Scoggin & Sanders' No. 1 L. W. Burell, 150 ft. from E line, 1,750 ft. from N line of M. E. Gage Sur. No. 395 ..... T.D. 425 ft.; S.D.

MILAM COUNTY

O. H. Birdwell's No. 1 J. R. Bartek, 150 ft. from N line, 180 ft. from W line of 88-ac. tract in J. A. de Pena Sur. ..... T.D. 1,460 ft.; drlg.
Fred Pederson's No. 1 T. E. Fulton, 1,000 ft. from NW line, 320 ft. from NE line of 148-ac. tract in Juan Jose Acosta Sur. ..... T.D. 1,400 ft.; standing.

NUECES COUNTY

Sullivan and Texon Royalty Co.'s No. 1 Simmons & Perry, 330 ft. from S and W lines of NE of square 640-ac. section out of SW cor. of Simmons & Perry tract, 2 miles east of Agua Dulce Field ..... Rigged up.

SAN PATRICIO COUNTY

Plymouth Oil Co.'s No. 1 Welder, 4,700 ft. N of Chiltipin Creek, 900 ft. from W line of J. M. and F. Portilla Sur., 1½ miles N from Sinton ..... T.D. 1,000 ft.; set 10-in. csg.

STARR COUNTY

Accumulative Royalty Co.'s No. 1, Martinez, 800 ft. from S line, 500 ft. from W line of C.C.S.D.&R. G.N.G. Sur. No. 217 ..... T.D. 2,865 ft.; changing rigs; to go to 4,000 ft.
B. & B. Oil Co.'s No. 2 Kelsey Bass, 330 ft. from W and S lines of Blk. 12 of Subd. of Porcions 86 and 87, jurisdiction Camargo ..... Rigging up.
Danvers & Harrison's No. 1 C. Ramos, 2,310 ft. from SE line, 330 ft. from SW line of Sur. No. 150 .. ... T.D. 2,000 ft.; abnd. dry.
Dean Bros.' No. 1 M. M. Garcia, 2,150 ft. from S line, 4,600 ft. from W line of Sur. No. 916 ..... Location.
Goodwin & Yantis' No. 5 Kelsey Bass, 150 ft. from S and W lines of Blk. 1, Sur. 3, of Coastal O. & G. Co.'s Subd. of Porcion 86, jurisdiction Camargo... Rigged up.
Great Plains Oil Co.'s No. 1 Sanchez, 660 ft. from W line, 330 ft. from S line of SE NW of Sur. No. 344.. T.D. 3,517 ft.; drilled plugs; bailing.
Jeffries-Lambeth Drlg. Co.'s No. 2 Starr County Cattle Co., N of No. 1 in Share 60, Porcion 89 ..... Rigging up.
W. H. Liber's No. 1 I. V. Garcia, 1,546 ft. from N line, 962 ft. from W line of 254-ac. tract in Porcion No. 75, jurisdiction of Camargo ..... T.D. 1,035 ft.; drlg.
Millihan Drilling Co.'s No. 1 Rogan, 150 ft. from NW and NE lines of SE 468 acres of Sur. 6, El Javali grant ..... Moving in tools.
Myers, Sullivan & Jenkins' No. 1 Starr County Cattle Co., 330 ft. from N line, 330 ft. from W line, Blk. 63, Porcion 89, Share 60 ..... T.D. 2,520 ft.; standing.
R. D. Perkins & Hoffman's No. 1 E. A. Peffler, 3,090 ft. from W line, 2,480 ft. from S line of Sur. 933 .. T.D. 1,547 ft.; standing.

TRAVIS COUNTY

Franklin et al's No. 1-A Reimers, 1,200 ft. from SE line, 1,400 ft. from most southerly SW line of Sur. No. 35 ..... T.D. 925 ft.; standing; to be comp. by R. L. Batts.
G. M. Rowe's No. 2 Smith (200-ac. tract), 450 ft. from NE and SE lines of tract in L. Kimbro Sur. ..... T.D. 822 ft.; drlg.

WEBB COUNTY

L. E. Lockhart's No. 1 E. Eikel, 330 ft. from N line, 240 ft. from E line of Sur. No. 1,672 ..... Rigging up.
McGhain et al's No. 1 F. C. Gowdy, 330 ft. from E line, 1,450 ft. from N line of Sur. No. 2,112 ..... Derrick.

WILSON COUNTY

Bidnar & Powell's No. 1 L. C. George, 400 ft. from SE line, 475 ft. from SW line of 86.5-ac. tract in C. Diaz Sur. No. 44 ..... T.D. 1,275 ft.; drlg. shale.

WILLIAMSON COUNTY

McLean et al's No. 2 R. C. Miller, 800 ft. to S line, 100 ft. to W line of tract, B. Manlove Sur. ..... T.D. 2,300 ft.; standing.
R. S. Wilson's No. 2 Sing, 300 ft. from SW line, 1,250 ft. from SE line, of T. A. Moore Sur. ..... T.D. 530 ft.; S.D.

ZAPATA COUNTY

J. P. Doyle's No. 1 I. Ramirez, 150 ft. from NW and SW lines of Blk. 15, Share 1, Porcion 18 ..... Abnd.
Muckelroy's No. 1 Flores, on NE line and 75 ft. from SE line of Lot 2, Blk. 30, Muckelroy Subd. of Porcion No. 37 ..... Derrick.
Texas Co.'s No. 38 Whitehead, 3,302 ft. from SE line, 20,998 ft. from SW line in Cerrito Blanco Sur. .... T.D. 1,264 ft.; abnd.

Southwest Texas Proven Areas

Week Ending February 17

CEDAR CREEK POOL—BASTROP COUNTY

Marts & Beavens' No. 6 Reyes, 150 ft. from NW and SW of Amada Reyes' 233-ac. tract in Addison Litton League ..... T.D. 1,760 ft.; comp. 500 bbls. dly.

NORTH DALE POOL—BASTROP COUNTY

Marts & Beavens' No. 1 J. W. Miears, 1,065 ft. from SW line, 685 ft. from NW line of John Maximilian Sur. ..... T.D. 2,280 ft.; abnd. dry.
Ogden & Reed's No. 2 Spradlin, 800 ft. from N line, 200 ft. from SE line of 113-ac. tract, 600 ft. SW of No. 1 Spradlin in Joshua Gray Sur. ..... Rigging up.
Ogden & Reed's No. 1 W. F. Talley, 200 ft. from SE and SW lines of 198-ac. tract in Joshua Gray Sur... T.D. 2,296 ft.; flowed 30 bbls. through tubing; rigged up to pump.
Watt L. Saunders' No. 1 Harris, 1,100 ft. from SW line, 2,330 ft. from NW line of John Maximilian Sur. 22 ..... T.D. 625 ft.; drlg.
Witherspoon Oil Co.'s No. 1 A. H. Harris, 150 ft. from SE and SW lines of Harris' 180-ac. tract in Joshua Gray Sur. ..... Spudded in.

TULETA POOL—BEE COUNTY

Garland Clymore's No. 1 Rapp & Hatch, 650 ft. E along the S line from R.R., thence 1,350 ft. N at R/A in Sec. 12 of J. M. Uranga Sur. ..... T.D. 4,041 ft.; tested mud in Pettus sand.

ECKERT POOL—BEXAR COUNTY

Alamo Nat. Gas Co.'s No. 2 Coreth, 300 ft. SE of Humble's No. 2 Coreth in A. Stafford Sur. ..... T.D. 1,055 ft.; setting 6⅝-in. csg.
J. F. Harrison's No. 4 F. Gembler, 150 ft. from NW line, 460 ft. from NE line of 88-ac. tract in J. Montes Sur. ..... T.D. 831 ft.; S.D.
S. J. Moore's No. 5 T. W. Masterson, 150 ft. from S line, 175 ft. from W line of 41-ac. tract in Miguel Gortaris Sur. ..... T.D. 736 ft.; csg. stuck at 300 ft.
S. J. Moore's No. 4 T. W. Masterson, 150 ft. from S and W lines of tract in M. Cartari Sur. ..... T.D. 330 ft.; standing.

VON ORMY POOL—BEXAR COUNTY

Von Ormy Oil Co.'s No. 2 E. B. Carruth, 515 ft. from W line, 1,970 ft. from S line of 160-ac. tract out of 657-ac. tract in F. Rolen Sur. ..... Rigged up and standing; to be drilled by Cosby & Flowers.

EAGLE HILL POOL—DUVAL COUNTY

Al Buchanan's No. 5 Duval County Ranch Co., 990 ft. from E line, 330 ft. from S line of N½ of Sur. No. 206 ..... Location.
Al Buchanan's No. 4 Duval County Ranch Co., 990 ft. from S line, 2,310 ft. from E line of N½ Sur. 206 .. T.D. 100 ft.; standing.
R. D. Kelley's (S.R.C.) No. 5 Foster, 330 ft. from S and W lines of 50-ac. tract in Sur. No. 206 ..... T.D. 2,147 ft.; standing 2,120-47 ft.; tested 9 joints oil; no water; set csg.
Shasta Oil Co.'s No. 3 Foster, 50 ft. S of No. 1, or 380 ft. from N line, 330 ft. from E line of S½ of Sur. No. 206 ..... Rigging up.
Texas Co.'s No. 7-A Duval County Ranch, 2,970 ft. from E line, 990 ft. from N line of Sur. No. 206 .. T.D. 2,362 ft.; recementing.

EAST COLE POOL—DUVAL COUNTY

Motes-Campbell's No. 1 Bruni, 150 ft. from NE and SE lines of Sec. 493, Myrtle E. Hale Subd., Mariano Arispe grant ..... T.D. 1,400 ft.; drlg.

IGNACIO POOL—DUVAL COUNTY

DeSoto O. & G. Co.'s No. 3 Wood-Welder, 2,100 ft. from W line, 1,900 ft. from N line of Sur. No. 211..... T.D. 350 ft.; drlg.

NORTH GOVERNMENT WELLS POOL—DUVAL COUNTY

Humble Oil & Ref. Co.'s No. 32 C. W. Hahl, 2,970 ft. from S line, 1,650 ft. from W line of E½ of Sur. No. 360 ..... T.D. 2,403 ft.; set csg.; W.O.C.
Humble Oil & Ref. Co.'s No. 33 C. W. Hahl, 4,350 ft. from S line, 1,650 ft. from W line of E half of Sur. No. 360 ..... Derrick.
Humble O. & R. Co.'s No. 31 C. W. Hahl, 1,690 ft. from N line, 330 ft. from W line of Sur. No. 74.... T.D. 2,243 ft.; abnd. dry.
K. O. T. Oil Co.'s No. 3 Lundell, 1,470 ft. from S line, 1,170 ft. from W line of Sur. No. 48 ..... Spudded in.
Magnolia Pet. Co.'s No. 18 Duval County Ranch Co., 2,970 ft. from E line, 1,650 ft. from S line of Sur. No. 208 ..... T.D. 2,313 ft.; set csg.; W.O.C.
Reynosa Oil Corp.'s No. 3-D Duval County Ranch Co., 330 ft. from S and E lines of S½ SW of Sur. No. 362 ..... T.D. 1,000 ft.; drlg.
Reynosa Oil Corp.'s No. 7-A Duval County Ranch, 330 ft. from N line, 990 ft. from E line of N½ SW of Sur. No. 362 ..... T.D. 2,264 ft.; comp. 7 bbls. hrly. on quarter-inch choke.
Sun Oil Co.'s No. 32 Weiderkehr, 3,654 ft. from W line, 330 ft. from N line of Sur. No. 359 ..... Spudded in; set surface csg.
Sun Oil Co.'s No. 33 Weiderkehr, 330 ft. from S line, 990 ft. from E line of Sur. No. 359 ..... Location.
Sun Oil Co.'s No. 27 Hahl, 330 ft. N line, 660 ft. W line of Sur. No. 359 ..... T.D. 2,306 ft.; comp. 16 bbls. hrly.
Russ Pet. Co.'s No. 4-A C. W. Hahl, 330 ft. from S and W lines of NW SW Sur. No. 46 ..... T.D. 2,292 ft.; set csg.; W.O.C.
Sun Oil Co.'s No. 29 Weiderkehr, 1,650 ft. from W line, 330 ft. from N line of Sur. No. 359 ..... T.D. 1,700 ft.; drlg.
Sun Oil Co.'s No. 30 Weiderkehr, 1,659 ft. from E line, 990 ft. from N line of Sur. No. 359 ..... T.D. 2,304 ft.; drlg. plugs.
Sun Oil Co.'s No. 31 Weiderkehr, 2,310 ft. from W line, 330 ft. from N line of Sur. No. 359 ..... T.D. 2,294 ft.; set csg.; W.O.C.
Sun Oil Co.'s No. 34 Weiderkehr, 330 ft. from S line, 1,650 ft. from E line of Sur. No. 359 ..... T.D. 2,242 ft.; set csg.; W.O.C.
Texas Co.'s No. 5 Duval County Ranch Co., 330 ft. from S line, 990 ft. from E line of SE Sur. No. 362.. T.D. 1,000 ft.; S.D. for repairs.
Texas Co.'s No. 10 M. B. Johnson, 1,650 ft. from S line, 150 ft. from W line of Sur. No. 42 ..... T.D. 2,288 ft.; comp. 2,000,000 ft. gas with 650 lbs. on tubing.
Texas Co.'s No. 10 H. Wendt, 330 ft. from W line, 1,650 ft. from N line of Sur. No. 42 ..... T.D. 1,600 ft.; drlg.

ORIGINAL GOVERNMENT WELLS POOL—DUVAL COUNTY

Trapshooter Reilly's No. 1-B C. W. Hahl, 200 ft. from W line, 330 ft. from S line of Blk. 26, Sur. 250.... Location.

SOUTH GOVERNMENT WELLS POOL—DUVAL COUNTY

Cox & Hamon's No. 2 State, 330 ft. from S and E lines of NE SW Sur. No. 60 ..... Rigging up.
Cox & Hamon's No. 1 State, 330 ft. from S and E lines of NE SW of Sur. No. 60 ..... T.D. 2,247 ft.; comp. 25 bbls. hrly.
Humble O. & R. Co.'s No. 17 Paul White, 1,980 ft. from E line, 990 ft. from S line of Sur. No. 249.. .. T.D. 2,263 ft.; running tubing.
Magnolia Pet. Co.'s No. 6 Lundell, 1,650 ft. from E line, 990 ft. from S line of SE Sur. No. 60 ..... T.D. 2,264 ft.; abnd.; salt water.

SARNOSA POOL—DUVAL COUNTY

Magnolia Pet. Co.'s No. 5 Ruiz, 330 ft. from NE and SE lines of S¼ of Sur. No. 574 ..... T.D. 2,468 ft.; set csg.; W.O.C.

NEW BERLIN POOL—GUADALUPE COUNTY

J. A. Harper's No. 2 Rosenbrook, 660 ft. SW of No. 1...T.D. 701 ft.; standing.

ALWORTH POOL—JIM HOGG COUNTY

French Oil Corp.'s No. 1 M. Garza (W side of pool) Sur. No. 281 ..... T.D. 250 ft.; drlg.

KINGSVILLE POOL—KLEBERG COUNTY

Ryals & Bartlett's No. 1 Flato, 150 ft from N line, 30 ft. from W line of NE SE Sec. 40, of Kleberg Town & Improvement Co. Sur. ..... Derrick.

JACOB POOL—McMULLEN COUNTY

C. R. Kennon's No. 1 Lark, 310 ft. from W line, 150 ft. from N line of 20-ac. tract, Blk. 27, Scrugham Sur. ..... T.D. 1,070 ft.; recmtd. liner at 1,044 ft.
Loma Oil Co.'s No. 18-A Jacobs, 660 ft. S of No. 11, in W. H. Jacobs Sur. No. 8 ..... Abnd. location.

CUEVITAS POOL—STARR COUNTY

Sun Oil Co.'s No. 4-C Guerra, 1,320 ft. from NW line of Porcion, 660 ft. SW of E cor. of LaSacatosa grant ..... T.D. 2,050 ft.; coring.

Sun Oil Co.'s No. 1-D Guerra, 4,353 ft. from NE line, 3,300 ft. from SE line of La Sacatosa grant ..... Rigging up.

KING POOL—NUECES COUNTY

John F. Camp's No. 2 King, 990 ft. from N line, 330 ft. from E line of NE Sec. 24, of King Farm lots.. Moving in rig.

LOS OLMOS POOL—STARR COUNTY

Los Olmos O. & G. Co.'s No. 57 Kelsey Bass, 150 ft. from N line, 668 ft. from W line of SE SW Sec. 6, Porcions 75, 76 and 77 ..... T.D. 640 ft.; standing; depth corrected.

LAUREL POOL—WEBB COUNTY

South Texas Oil Co.'s No. 18 Rosenberg, 550 ft. from S line, 260 ft. from E line of Blk. 5, Sur. No. 271.. T.D. 2,261 ft.; comp. 5,000,000 ft. gas; 570 lbs.

MOCA POOL—WEBB COUNTY

Quintana Oil Co.'s No. 4 Duval County Ranch Co., 1,645 ft. from E line, 650 ft. from S line of Blk. 11, Share 3, Zapata School land ..... T.D. 845 ft.; set csg.; W.O.C.

EAST COLE POOL—WEBB COUNTY

Allen & Morris' No. 1 Bruni, 418 ft. from NE line, 260 ft. from SE line of Blk. 2, Sec. 5, of Adams Subd. of Arispe grant ..... T.D. 2,959 ft.; set csg.

WEST COLE POOL—WEBB COUNTY

Cole Pet. Co.'s No. 83 R. Benavides, 1,362 ft. from E line, 440 ft. from N line, Blk. 6 in Sur. No. 412 .... Spudded in.

Cole Pet. Co.'s No. 82 R. Benavides, 402 ft. from W line, 160 ft. from S line of Blk. 3, Sur. No. 412.... T.D. 2,352 ft.; comp. 60 bbls. dly.

Magnolia Pet. Co.'s No. 1 F. Benavides, 660 ft. from S and E lines of Blk. 14 ..... Skidding derrick.

Magnolia Pet. Co.'s No. 2 S. S. Benavides, 660 ft. from N line, 150 ft. from W line of Sur. No. 696 ..... T.D. 2,338 ft.; changing to standard tools.

BYERSVILLE POOL—WILLIAMSON COUNTY

Taylor Prod. Co.'s No. 1 John Reiger, 150 ft. from NE line, 3,950 ft. from SE line of P. Cartwright Sur. ..... Ready to spud.

ESCOBAS POOL—ZAPATA COUNTY

Allen & Morris' No. 41 Gutierrez, 1,950 ft. from NE line, 3,063 ft. from SE line of Share No. 4 in Comitas grant ..... T.D. 1,000 ft.; drlg.

Kleiner & Hill's No. 7 Gutierrez, 2,345 ft. from NW line, 200 ft. from NE line of Share 4 in Comitas grant ..... Rigged up.

Texas Co.'s No. 32 Whitehead, 3,300 ft. from SE line, 20,998 ft. from SW line of Cerrito Blanco grant.... T.D. 1,264 ft.; abnd.

W. E. West and J. P. Perry's No. 1 Garcia, 1,200 ft. from NW line, 200 ft. from NE line of Share 3 of Comitas grant ..... T.D. 225 ft.; standing.

MARTINEZ POOL—ZAPATA COUNTY

W. R. Shankle and Wm. McGinley's No. 2 Manuel Trevino heirs, 330 ft. from W line, 150 ft. from S line of Blk. 15, Sur. No. 411 ..... T.D. 1,500 ft.; standing.

MIRANDO VALLEY POOL—ZAPATA COUNTY

Blair & Blankenship's No. 1 R. Hinnant, 450 ft. from S line, 300 ft. from W line of Blk. 16, Sur. No. 116.. T.D. 1,505 ft.; ran tubing; swabbing.

O. W. Killam's No. 1 R. Hinnant, 365 ft. from SE line, 158 ft. from SW line of Blk. 7, Sur. No. 10 ..... T.D. 150 ft.; drlg.

VILLA POOL—ZAPATA COUNTY

Danvers & Harrison's No. 1 Garza, 330 ft. from SE and NE lines of Blk. 102, Douglas Subd., Comitas grant.. T.D. 250 ft.; drlg.

Wildcat Operations in Louisiana-Arkansas

(Continued from Page 65)

L. D. Higgins et al's No. 1 Burkett, 330 ft. S, 270 ft. W, NE cor. Sec. 16-9-13 ..... Drlg. 1,000 ft.

R. P. Holland et al's No. 1 A. J. Burkett, 990 ft. S, 330 ft. W of C, Sec. 10-9-13 ..... Arranging to deepen 1,850 ft.

T. J. Johnson's No. 1 Lynch estate, 330 ft. S and W, NE cor. NW SE Sec. 29-9-13 ..... Set 6-in. 1,809 ft.

Lanier & Rodgers' No. 1 Paul, 260 ft. N, 40 ft. E, SW cor. NW, Sec. 10-9-13 ..... W.O.S.R. 1,900 ft.

Zan Lloyd's No. 1 Henderson, 330 ft. N and W, C Sec. 29-9-13 ..... Drlg. 1,700 ft.

Miles & Strickland's No. 1 Ross & Son, 150 ft. N, 990 ft. E, SW cor. NW Sec. 10-9-13 ..... W.O.S.R. 2,007 ft.

John W. Moffett's No. 1 Logan Oil Co., Sec. 3-9-13... W.O.S.R. 1,985 ft.

Geo. W. Pace's No. 1 Quinn, 600 ft. E, 180 ft. S, NW cor. Sec. 10-9-13 ..... Comp. pumping 60 bbls.; 2,033 ft.

Reese and Martin's No. 1 Allen, 762 ft. S and 308 ft. E NW cor. Sec. 10-9-13 ..... W.O.S.R. 2,021 ft.

Reese & Martin's No. 1 E. Harris, 360 ft. S, 190 ft. E, NW cor. SE NW Sec. 10-9-13 ..... Drlg. 1,845 ft.

W. H. Rowe et al's No. 1 Craig, 330 ft. S and E, of center Sec. 22-9-13 ..... Set 10-in. 40 ft.

Sabine Royalties Co.'s No. 2 Graham, 330 ft. N and E, SW cor. NW, Sec. 20-9-13 ..... P.B. to 2,030 ft.

J. E. Sedberry's No. 1 Morgan, NE cor. NW NW Sec. 10-9-13 ..... Testing 1,989 ft.

Walter R. Smith's No. 1 E. K. Harris, Sec. 10-9-13..... Using acid 1,998 ft.

Texas Trading Co.'s No. 1 Isgitt, 78 ft. N, 41 ft. W, SE cor. Sec. 9-9-13 ..... Tested S.W. 2,047 ft.

J. B. Williams' No. 1 Tatum, 330 ft. N and W, SE cor. NW SE Sec. 32-9-13 ..... Rigging up.

Windsor Oil Co.'s No. 2 Barr, 330 ft. N and E, SW cor. NW Sec. 15-9-13 ..... Location.

Winn & Caviness' No. 1 Paul est., 330 ft. N, 43 ft. W, SE cor. NW Sec. 9-9-13 ..... S.D.; W.O. 1,918 ft.

SABINE—ZWOLLE

H. C. Mauldin's No. 1 Alford, 330 ft. S and W, NE cor. NW NW Sec. 18-7-10 ..... Derrick.

H. C. Mauldin's No. 1 Van Vickhaven, 330 ft. N and W, SE cor. NE Sec. 3-7-11 ..... W.O.S.R. 2,300 ft.

Arkansas

JEFFERSON COUNTY

J. E. Elliott's No. 1 B. V. Nevin, 440 ft. N and E, SW cor. SW NW Sec. 26-4-10 ..... Partly rigged up and S.D.

HEMPSTEAD COUNTY

A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-13-26, S.D. 947 ft.

LAFAYETTE COUNTY

Douglas Lawn's No. 1 Camp, 330 ft. S and W, NE cor. SW SE Sec. 14-15-23 ..... Set 10-in. 52 ft.

George W. Harper's No. 2 Bodcaw, 150 ft. S, 550 ft. E NW cor. SW NW Sec. 16-15-23 ..... S.D. 1,216 ft.

MILLER COUNTY

Duluth-Ark. Oil Co.'s No. 2 Bock, 330 ft. S and E, NW cor. SE SW Sec. 34-15-26 ..... Arranging to pump with jack 2,-307 ft.

Fitzwater et al's No. 1 Norson, SW cor. SE SW Sec. 20-15-27 ..... Coring 3,031 ft.

King Oil Corp.'s No. 1 C. H. Schroder, 200 ft. N, 330 ft. E, SW cor. SW NE Sec. 24-14-28 ..... Set 12½-in. 72 ft.

Magnolia Pet. Co.'s No. 2 Olivet, 310 ft. S, 1,170 ft. E NW cor. NW NE Sec. 4-16-26 ..... Comp. flowing 35 bbls.; 2,920 ft.

C. E. Murdock's No. 1 Rose, Sec. 4-16-26..... Pumped 25 bbls. oil and S.W.; P B.

C. E. Murdock's No. 1 Smith (formerly Baker & McMurray), 150 ft. N and W, SE cor. SE SW Sec. 33-15-26 ..... W.O.S.R. 2,926 ft.

Texarkana Oil Corp.'s No. 2 E. L. Beck, 240 ft. N, 480 ft. E, SW cor. SW SE Sec. 23-15-26 ..... W.O.S.R. 2,931 ft.

OUACHITA COUNTY

L. L. McDonald's No. 1 J. A. Robertson, 300 ft. S and E, NW cor. NE NW Sec. 25-15-16..... W.O.S.R. 2,092 ft.

UNION COUNTY

E. R. Henderson's No. 2 J. H. Ogden, 330 ft. S and E, NW cor. SW SE Sec. 32-18-14 ..... W.O.S.R. 2,208 ft.

E. R. Henderson's No. 1 Vines, 330 ft. N and W, SE cor. SW SE Sec. 29-18-14 ..... Swabbing 2,196 ft.

Mrs. R. K. Jones et al's No. 1 J. Davis, 330 ft. N and W, SE cor. NW NW Sec. 28-16-14 ..... Set 10-in. 102 ft.

Marine Oil Co.'s No. 2-E Thompson, Sec. 10-18-13..... Drlg. 3,534 ft.

Chas. Steele's No. 1 J. B. Combs, 150 ft. N, 185 ft. W, SE cor. SW NW Sec. 35-18-16 ..... Rigging up.

Tubal Pet. Co.'s No. 1 Gaddy, 340 ft. N and E, SW cor. SE NW Sec. 14-17-14 ..... Coring 2,837 ft.

Mississippi

GREENE COUNTY

United Gas Public Service Co.'s No. 1 Davis, C NW Sec. 30-1n-5w ..... Coring 2,650 ft.

NEWTON COUNTY

Bod Dalton et al's No. 2 Majura, SE SE Sec. 25-6-11.... S.D. 3,300 ft.

SIMPSON COUNTY

Beavy Corp.'s No. 1 R. J. Beavy, C SW Sec. 33-3n-4e... Arranging to set 6⅝-in. 2,325 ft.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, Sec. 24-2n-9e, SW cor. SW SE ..... Moving in rig.

WARREN COUNTY

Orbet Drlg. Co.'s No. 1 R. L. Parker, 300 ft. E, CWL, Sec. 14-14-1e ..... S.D. for csg. 3,161 ft.

Louisiana-Arkansas Proven Areas

North Louisiana

CADDO—RODESSA

Company, well, farm name, section and block—	Remarks:
Louana O. & G. Co.'s No. 2-A Hammock, C NW NE Sec. 5-15-16	S.D. 2,800 ft.
R. W. Norton's No. 1-B J. B. French, 660 ft. S and E, NW cor., Sec. 34-23-16	Drlg. 6,440 ft.

CLAIBORNE PARISH

United Gas Public Service Co.'s No. 2 Tony Durrett, 38 ft. S, 50 ft. W of CNL NE NW Sec. 8-19-5..... Coring 4,539 ft.

MOREHOUSE PARISH

United Carbon Co.'s No. 1 Montgomery, 1,339 ft. S, 2,268 ft. E of C Sec. 9-21-5I ..... Set 4½-in. 2,468 ft.; T.D. 2,500 ft.

SABINE PARISH—ZWOLLE

Baird Bros.' No. 1 Cooper, 330 ft. S and W, NE cor. SE Sec. 30-8-11 ..... Using acid 2,500 ft.

Dyer et al's No. 1 McCollister, 330 ft. S and E, NW cor. SW NE Sec. 24-7-12 ..... S.D. 1,100 ft.

Magnolia Pet. Co.'s No. 2 Gindratt, 330 ft. N, 320 ft. E, SW cor. SE Sec. 30-8-11 ..... T.A. 2,485 ft.

Geo. L. Pace's No. 3 F. Greer, 150 ft. S and E, NW cor. NE NW Sec. 32-8-11 ..... Comp. flowing 300 bbls.; 2,400 ft.

J. H. Reeves' No. 1 Sabine Lbr. Co., 330 ft. N and S SE cor. NE NW Sec. 7-7-11 ..... S.D.; W.O. 2,700 ft.

C. T. Ruffin's No. 2 Williams, 330 ft. N and W, SE cor. NW NE Sec. 7-7-11 ..... Using acid 2,558 ft.

A. H. Tarver's No. 2 Baur and Barthold, Sec. 25-8-12 .. S.D.; W.O. 2,639 ft.

L. J. Tillery's No. 1 Sabine Lbr. Co., 800 ft. S, 220 ft. W, NE cor. Lot 3, La. Nava grant, Sec. 5-7-11 ..... Testing 2,475 ft.

John Wrather et al's No. 1 Pruitt, 110 ft. W, 330 ft. N, SE cor. SW NE Sec. 25-8-12 ..... S.D.; W.O. 2,526 ft.

Mississippi

HINDS COUNTY

Alexander & Weaver's No. 1 Mayes, Sec. 25-6n-1e... .. Drlg. 60 ft.

RANKIN COUNTY

Benedum & Trees' No. 1 Southern Dev. Co., Sec. 35-3n-1e ..... Set 12½-in. 902 ft.

Ferguson, Fuller & Metz' No. 1 Ammons, 350 ft. E and S, NW cor. NW NW Sec. 35-3n-3e ..... Partly rigged up and S.D.

Henslee & Tanner's No. 1 Sloan, 450 ft. S and E, NW cor. NW SW Sec. 7-5n-2E ..... Rigged up.

Cleve Love et al's No. 1 Thomas, SW Sec. 10-4-1e ..... Dry and abd. 5,465 ft.

East Texas (Border Counties)

PANOLA COUNTY

Dale and Sneed's No. 1 Wooten estate, P. Martin Sur. .. Rigging up.

Holden and Nichols' No. 1 S. W. Ray, W. B. Culver Sur. ..... W.O. csg. 2,080 ft.

Kelsker and Uanier's No. 1 Frost Lbr. Ind., Mary Potts Sur. ..... S.D. 2,409 ft.

C. R. Obermeyer et al's No. 1 Wooten estate, P. Martin Sur. ..... W.O. csg. 2,110 ft.

Rocundo and Acres' No. 1 Burnett Lbr. Co., J. H. Mallory Sur. ..... Rigging up.

Southern Prod. Co.'s No. 3 Wooten estate, P. Martin Sur. ..... S.D. 2,117 ft.

CLASSIFIED ADVERTISING

Business Opportunities

FOR SALE OR CONTRACT.—Two large bodies of good Bentonite accessible. A. H. Davis, Canon City, Colo.

AN OPPORTUNITY. For $500 will sell 1/10 interest in 1,000-acre Block and well to be drilled to 1,500 feet. Block in McMullen County (South Texas) on good trend and good geology by major company. Write L. W. Stieren, Alamo National Bank Bldg., San Antonio, Tex.

Exceptional Opportunity in Gold Mining. W. C. FRAZIER Nampa, Idaho.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Old-Press, 215 East Third St., Tulsa, Okla.

Situations Wanted

ACCOUNTANT-Engineer — Thirteen years responsible experience with large oil organization on income tax work. P. O. Box 1264, Tulsa, Okla.

Engineer: Young, 10 yrs. design, development, operation, mod. refining equipment. Now employed. Desires connection refg. or equip. organization. Box F-972, The Oil and Gas Journal, Tulsa, Okla.

Situations Wanted

EXPERIENCED Foreign Traffic and Export Sales Manager, seeks responsible position with oil company. Capable of taking full charge. Address Box F-971, The Oil and Gas Journal, Tulsa, Okla.

Help Wanted

FOUR ADVERTISING REPRESENTATIVES WANTED. To cover Pennsylvania, Illinois, Oklahoma and Texas for old established Annual Directory in Petroleum Industry. Must be aggressive, reliable and willing to work. New feature introduced this year makes every equipment company a prospect. Names furnished. Excellent chance to make real money and permanent connection. Liberal commission. References required. Write Box F-982, The Oil and Gas Journal, Tulsa, Okla.

Patent Attorneys

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form:
"Evidence of Conception,"
Instructions "How to Establish Your Rights" and complete information FREE!
LANCASTER, ALLWINE & ROMMEL
418 Bowen Building,
Washington, D. C.

CLASSIFIED ADVERTISING

Classified Rates

Classified Advertising rates are 35 cents a line for the first insertion and 25 cents a line for each additional insertion, PAYABLE IN ADVANCE.

Six words usually constitute a line.

Compute white space at line rate.

Minimum of three lines accepted.

	1 time	2 times	3 times	4 times
3 lines	$1.05	$1.80	$2.55	$3.30
4 lines	1.40	2.40	3.40	4.40
5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

To avoid delay be sure to send remittance with copy. Over payments will be refunded. One time insertions will not be run until fully paid.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

For Sale—Equipment

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air Compressor. Six-inch Oster Pipe Threading Machine. Also, large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
[illegible] West 2nd St. Cincinnati, Ohio.

HEAVY Casing Standard Rig Equipment for sale. Includes 1,800' of 11¾" once run fifty-six pound Class D—Pittsburgh Seamless Pipe, wonderful buy one-half price; Standard all Steel Bull and Calf Wheels, Beams, Chain Driven Sand Reel, Steel House, etc. Finest equipment money can buy at bargain. Deep Oil Development Company, 9th Floor Hamilton Building, Wichita Falls, Tex.

FOR SALE—50,000 ft. second hand 4-inch Byers wrought iron gas pipe, recessed collars. Address A. B. Ayers, Ayers Block, New Castle, Ind.

FOR SALE—One 84-ft. All Steel Rig, steel bullwheels, calfwheels, and beam, 6-inch irons, with complete string of tools, and 45 horsepower boiler.
One No. 45 Star Spudder, gasoline driven, with complete string of tools. Three Ford Tractors, with double drum hoists. All Chicago Deliveries.
WILLIAM H. CATER,
2643 W. Monroe St., Chicago, Illinois.

ONE 6-foot diameter, 16 bubble plate Jackson absorber, 90 lb. test. Location Texas Panhandle. Cash or terms. Address Box F-970, The Oil and Gas Journal, Tulsa, Okla.

FIREBRICK—200,000 New at $15.00 per 1,000. Located at Marathon Refinery, Boynton, Okla.
W. C. Berry, Mayo Hotel, Tulsa.
or
Sonken-Galamba Corp., Kansas City, Kan.

SIX High Pressure Tanks—10'x30'x ¾" steel and ⅞" heads, electric welded, tested 150 lbs. Located at Marathon Refinery, Boynton, Okla.
W. C. Berry, Mayo Hotel, Tulsa.
or
Sonken-Galamba Corp., Kansas City, Kan.

Financing

JAMES E. MILLER CO., 207½ E Third St., Tulsa, Okla., will co-operate with responsible parties seeking aid in financing projects of higher order.

CAPITAL available for sound oil or mining projects; also for other new or going enterprises with future possibilities. Schelzel, 1150 Griswold St., Detroit, Mich.

For Sale—Equipment *For Sale—Equipment*

LIQUIDATING COMPLETE MARATHON REFINERY

located at Boynton, Okla. Cracking, skimming, lubricating, and latest type wax plant. Cost over $2,000,000.00 of which $1,500,000.00 expenditures in past 6 years, operated until January 1, 1934. Pipe stills, shell stills, 200 tanks of all sizes, over 150 pumps, 100 miles of pipe, 50,000 valves and fittings, all kinds pressure and recording instruments, complete automatic dial telephone system, 20—55,000 Bbl. storage tanks. Will sell all or any part at a fraction of cost. Inventory furnised on request. Wire, phone or write

SONKEN-GALAMBA CORPORATION

Mayo Hotel, Tulsa, Okla., or 64 North 2nd. St., Kansas City, Kansas.

Royalties—Production

BETTER CLASS
MONTHLY INCOME ROYALTIES
SUPPLIED REPUTABLE
DEALERS FOR THEIR
CONSERVATIVE CUSTOMERS
W. E. Cook, Court Arcade, Tulsa, Okla.

ROYALTIES CAREFULLY SELECTED
G. D. TERRIEN
Philcade Building. Tulsa, Okla.

PRODUCING OIL ROYALTIES
Bought and Sold.
Inquiries invited from Oil Companies, Bankers, Dealers.

DAVID R. MITCHELL & CO.,
Established 1916.
20 BROAD ST. NEW YORK.

ROYALTY GROUPS

We desire to get in touch with a few responsible dealers having a clientele that would be interested in purchasing groups of carefully selected oil royalties. Such groups contain a well balanced list of producing and prospective royalty interests, affording an attractive present income and unusually attractive speculative possibilities for increased income through early or future developments as a result of drilling operations.

SEVENTEEN YEARS ACTIVELY ENGAGED IN OIL BUSINESS IN TULSA. LAST FOURTEEN YEARS EXCLUSIVELY DEVOTED TO OIL ROYALTIES.

Maintaining our own complete organization and with our long experience in the oil royalty field, we are in position to furnish an efficient and dependable service.

PARAGON ROYALTY CORPORATION

604 ATLAS LIFE BUILDING
TULSA, OKLAHOMA

Federal Reserve Bank Bldg.
Kansas City, Mo.

SELECTING OIL ROYALTIES
for dealers a specialty.
Kansas-Oklahoma City-Seminole.
Chester Imes,
First National Bank Building,
Oklahoma City, Okla.

FREE ROYALTY BOOKLET
For the Asking
Recognized as the Best.
ROYALTY INVESTMENTS CORP.
Suite 641, Kennedy Bldg., Tulsa, Okla.

KANS.-OKLA. Producing Royalties, cheap. Leases-Royalty spreads in all active fields. Paul Haynes, Grantville, Kans.

PRODUCING OIL ROYALTIES
in Fractional deeds from $100 up.
John L. Dickson, Box 1113. Tulsa, Okla

PRODUCING OIL ROYALTIES
EAST TEXAS
W. J. Dobbs, Wilson Bldg., Dallas, Tex.

Royalties—Production

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

DEEDED ROYALTIES
WHOLESALE ONLY

Specializing in Groups and Combinations for fullest protection of principal and reasonable returns.
Individual Offerings for High Present returns—Undeveloped properties providing highly speculative possibilities.
Dealers Accounts exclusively.

J. B. McANALLY
HUNT BLDG.
TULSA.

OIL REPORT SERVICE
A monthly service of Oklahoma Prorated Pools, giving Potentials, Pipe Line Runs and Allowables. Price $7.50. Clyde Kelly, 306 Petroleum Bldg., Okla.City, Ok.

PRODUCING OIL ROYALTIES
H. P. BOWEN
809 Daniel Bldg., Tulsa, Okla.

OIL ROYALTIES
Bought—sold. Maintain markets in active and inactive oil securities. Information and statistical data on royalties and oil investments upon request, to banks—dealers—individuals.
LEVEN BROTHERS
Est. 1924
305 Broadway, New York, N. Y.

WET GAS STRUCK. Wells drilling. Need development by drilling more wells and erecting casinghead plant. Will sell royalties to finance additional wells or arrange acreage for drilling. Also can furnish equipment, casing to driller able finance drilling. Structure fully geologized, located middle coal fields LaVeta, Colo. A real proposition. S. W. PRESSEY, Pueblo, Colo.

High Grade Producing Royalties
Mid-Continent Area
Lon L. Simpson
Tulsa Loan Bldg., Tulsa, Okla.

HUBLER-JOHNSTON
Producing, semiproven and undeveloped royalties. Inquiries and offerings invited. 328 Ritz Bldg. Ph. 4-1592. Tulsa, Okla

ROYALTIES for dealers, producing, nonproducing Oklahoma, Kansas, Texas, Louisiana. Lowest prices and highest quality. James R. Haynes, Grantville, Kans

Oklahoma and Kansas Producing Royalties supplied reliable dealers.
G. A. SIMON
National Bank of Tulsa Bldg.,
Tulsa, Okla.

Oil and Gas Royalties
Kansas-Oklahoma-Texas
L. H. Witwer
217 Cole Bldg., Tulsa, Oklahoma

Income Producing Royalties
Mid-Continent Field
Harry A. George
Exchange Bank Bldg., Tulsa, Okla.

Display Rates

Classified Display Advertising set in similar style to this Ad or in two-column style is as follows:

1 inch	1 time	$5.00
1 inch	13 times	4.50
1 inch	26 times	4.00
1 inch	52 times	3.50

PAYABLE IN ADVANCE
MONTHLY

One-point borders and 10-point capitals are allowed; larger type not accepted.

To avoid delay be sure to send remittance with copy. Over payments will be refunded. One time insertions will not be run until fully paid.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

Royalties—Production

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood, P. O. Box 2261, Tulsa, Okla.

Leases—Production

BROKERS—Well located leases and perpetual royalties at wholesale prices, small and large tracts. Write A. C. Smith, P.O. Box 927, Houston, Texas.

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

WOODBINE SAND Wildcats starting where you have chance might make 40 for 1. Leases-Royalties. E. Croft, Proctor, Tex.

FOR SALE—Oil production and drilling blocks. La. and Tex. G. Lucas, 325 Ricou-Brewster Bldg., Shreveport, La.

FOR SALE
PRODUCING PROPERTY
IN EAST TEXAS

A 15-acre lease in the W. D. Giles tract, Maria Josefa Survey, Rusk County, East Texas. There are four large producing wells on this property, also one location for fifth well for which permit has been obtained. Address all inquiries to Box F-981, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—Cheap Leases and Royalties in Garfield Co. and NW OKLA. Inq's. invited. Write L. E. Jones, 121½ E. Bdw'y., Enid, Okla.

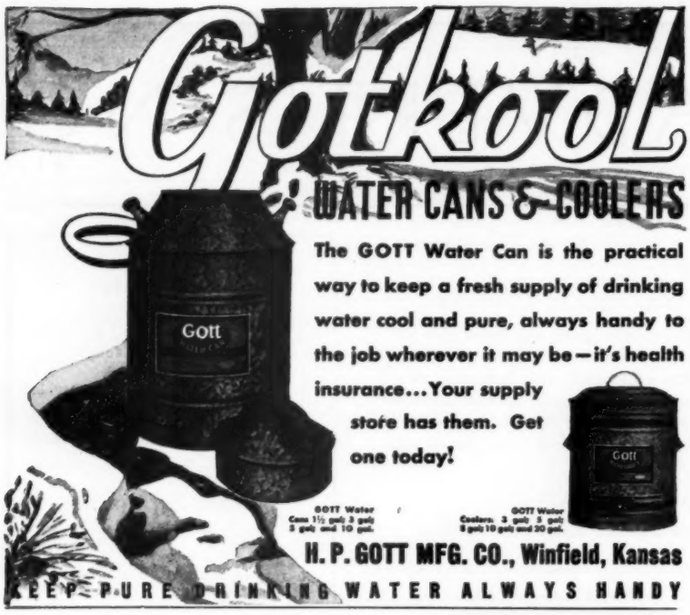
TO LEASE 685 A. Bartlesville Sand 1,100 ft. Lime Gas 1,250 in trend tested on two sides. Amenable to gas or air pressure. John S. McQuiston, Independence, Kans.

WANTED PRELIMINARY financing for leasing and development of an area having no competitive oil fields or pipe lines. The prospective area, 15 miles wide and 35 miles long, has good surface geology with oil and gas indications. Similar type of field as the East Texas and Cut Bank, Montana fields, but has much more to recommend it including several unusual possibilities not found elsewhere in the United States. If you intend to invest, finance or drill in a new territory this year don't fail to look this over. Address Box F-980, The Oil and Gas Journal, Tulsa, Okla.

Incorporations

CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

DELAWARE CHARTERS—Fees small, free forms. CHAS. G. GUYER, 901 Market St., Wilmington, Del.


Gottkool
WATER CANS & COOLERS
The GOTT Water Can is the practical way to keep a fresh supply of drinking water cool and pure, always handy to the job wherever it may be—it's health insurance...Your supply store has them. Get one today!
Gott
H. P. GOTT MFG. CO., Winfield, Kansas
KEEP PURE DRINKING WATER ALWAYS HANDY

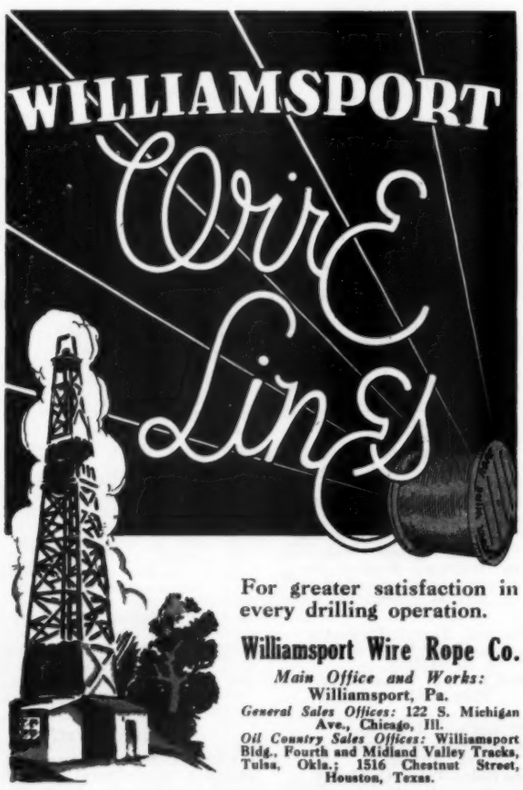
AXELSON

HEAVY DUTY CAGES

- Square milled, strengthened wings
- Hardened interior surface
- Maximum fluid capacity
- Increased operating life

AXELSON MANUFACTURING COMPANY

P. O. Box 710 Vernon Sta., Los Angeles, Cal.
Tulsa 50 Church St., New York St. Louis



For greater satisfaction in every drilling operation.

Williamsport Wire Rope Co.

Main Office and Works:
Williamsport, Pa.
General Sales Offices: 122 S. Michigan Ave., Chicago, Ill.
Oil Country Sales Offices: Williamsport Bldg., Fourth and Midland Valley Tracks, Tulsa, Okla.; 1516 Chestnut Street, Houston, Texas.

Index to Advertisers

A
Air Reduction Sales Co. .....
Allegheny Steel Co. 80
Allsteel Products Mfg. Co. 2
American Cable Co. .....
American Meter Co. 4
American Sheel & Tin Plate Co..
American Steel & Wire Co..... 53
Axelson Manufacturing Co. 96

B
Baker Oil Tools, Inc. 6
Baroid Sales Co. 17
Barret, William M., Inc. .....
Barrett Co., The .....
Bethlehem Steel Co. .....
Big Lake Oil Co. .....
Bradford Motor Works, Inc. 63
Bridgeport Machine Co. .....
Bristol Co., The .....
Broderick & Bascom Rope Co. ...
Brown Instrument Co. .....
Burroughs Adding Machine Co. ..
Butler Mfg. Co. 82
Byron Jackson Co. .....

C
Cameron Iron Works, Inc. .....
Chaplin-Fulton Mfg. Co., The ... 64
Chicago Bridge & Iron Works ...
Chicago Daily News, The .....
Cities Service Oil Co. 55
Classified Advertising 95
Cleveland Tractor Co., The .....
Climax Molybdenum Co. .....
Coffing Hoist Co. 64
Continental Oil Co. .....
Continental Supply Co., The 48-A
Cooper-Bessemer Corp., The .....
Crane Co. .....
Curtin, W. H., & Co. .....

D
Darling Valve & Mfg. Co. .....
Dart, E. M., Mfg. Co. .....
Davis Regulator Co. .....
Dearborn Chemical Co. .....
Detroit Graphite Co. 77
Devine, J. P., Mfg. Co., Inc. ....
Doheny Stone Drill Co. .....
Dow Chemical Co., The .....
Dowell Incorporated .....
Dresser, S. R., Mfg. Co. .....
DuPont DeNemours & Co., Inc., E. I. .....

E
Eagle-Picher Lead Co. 3
Edward Valve & Mfg. Co., Inc. .
Emsco Derrick & Equipment Co..
Ethyl Gasoline Corp. .....

F
Fairbanks-Morse Co. 48-A
Filtrol Co. of Calif. .....
Firestone Tire & Rubber Co., The
First National Bank & Trust Co., The .....
Fisher Governor Co. .....
Flexible Steel Lacing Co. .....
Foster Wheeler Corp. .....
.....Inside Back Cover
Four Wheel Drive Auto Co., The
Foxboro Co., The .....
Franklin Valveless Engine Co. ...
Frick-Reid Supply Corp. .....

G
Gardner-Denver Co. .....
Garlock Packing Co., The .....
Gaso Pump & Burner Mfg. Co. ..
Gasoline Products Co., The 31
Gates Rubber Co. .....
Gearench Mfg. Co. 16
General Electric Co. .....
General Motors Truck Co. .....
Geophysical Service, Inc. 79
Goodyear Tire & Rubber Co., Inc.
Gott, H. P., Mfg. Co., The 96
Grant Oil Tool Co. .....
Graver Tank & Mfg. Corp. 64
Guiberson Corp., The .....
Gulf Refining Co. .....

H
Halliburton Oil Well Cementing Co. ..... Front Cover
Hanlon-Buchanan, Inc. .....
Harrisburg Pipe & Pipe Bending Co. .....
Hazard Wire Rope Co. .....
Heeter, C. M., Sons & Co. .....
Hercules Tool Co. .....
Hughes Tool Co. .....Back Cover
Humble Oil & Refining Co. 64
Hydril Co. .....

I
Illinois Steel Co. .....
International Harvester Co. of America .....
International Petroleum Exposition

J
Jenkins Bros. .....
Jerguson Gage & Valve Co. .....
Jones & Laughlin Steel Corp. ... 24

K
Kellogg, M. W., Co., The .....
Kennedy Valve Mfg. Co., The ...
Key Boiler Equipment Co. .....
Kinley Co., M. M. .....

L
Landis Machine Co., Inc. .....
Lincoln Electric Co. .....
Ludlow Valve Mfg. Co., The ....
Lufkin Foundry & Machine Co. ..
Lummus Co., The 69
Lunkenheimer Co., The 67

Mc
McGregor Working Barrel Co., Inc.
McIntosh & Seymour Corp. .....

M
Macwhyte Co. .....
Magnolia Petroleum Co. .....
Maloney Tank Mfg. Co. .....
Mason-Neilan Regulator Co. 63
Mechanical Rubber Co., The ....
Mepham Corp., Geo. S. .....
Miller, M. L.—Engineers .....
Miller Sand Pump Co. .....
Mission Mfg. Co. .....
Moore, Lee C., & Co., The .....

N
National Bank of Tulsa 19
National Lead Co. .....
National Supply Co. 21
National Tank Seal Co. .....
National Transit Pump & Machine Co. .....
National Tube Co. .....

O
Oil Center Tool Co., Inc. 14
Oil Conservation Engineering Co..
Oil Equipment & Engineering Exposition .....
Oil Well Supply Co. 85
Oklahoma Gas & Electric Co. ...

P
Parkersburg Rig & Reel Co., The
Patterson-Ballagh Corp. 76
Penberthy Injector Co. 13
Petroleum Equipment Co. .....
Petroleum Rectifying Co. .....
.....Inside Front Cover
Pittsburgh Steel Co. .....
Powell Co., The, Wm. .....
Price-Trawick, Inc. .....
Producers & Refiners Corp. .....
Pure Oil Co., The .....

R
Rector Well Equipment Co. 14
Reid, Joseph, Gas Engine Co. ...
Republic Steel Corp. (Upson Nut Division) .....
Republic Steel Corp. .....
Roebling's, John A., Sons Co. ...
Ross, Inc., Dewey T. .....
Ryerson & Son., Inc., Joseph T. .. 76

S
Shell Union Oil Corp. .....
Sinclair Refining Co. .....
Smooth-On Mfg. Co. .....
South Chester Tube Co. .....
Sperry-Sun Well Surveying Co. .. 16
Sullivan Co., The 63

T
Taylor Forge & Pipe Co. .....
Taylor Instrument Companies ...
Texas Electric Service Co. .....
Texas Iron Works 14, 16, 17
Thermoid Rubber Co., The .....
Timken Roller Bearing Co. .....
Timken Steel & Tube Co. .....
Tretolite Co. .....
Tube Turns, Inc. .....
Tulsa Camera Record Co. .....
Tulsa Oil Thief Co. .....
Twin Disc Clutch Co. .....

U
Union Wire Rope Co. .....
Universal Oil Products Co. 23

V
Vellumoid Co., The .....
Victor Gasoline Co. 76
Vogt, Henry, Machine Co. 51

W
Walworth Co. 1
Warren Petroleum Co. 39
Westcott Valve Co. .....
Westinghouse Elec. & Mfg. Co. .. 27
Williams, C. K., Co. of Calif., Ltd.
Williams & Co., J. H. .....
Williamsport Wire Rope Co. 96
Wilson Supply Co. 14
Winkler-Koch Engineering Co., The
Worthington Pump & Machinery Corp. .....

Y
Youngstown Sheet & Tube Co., The 48-B
Yowell & Yarbrough, Inc. .....